MEETING MINUTES

Subject: Expedited Response Action Weekly Interface

TO: Distribution BUILDING: 740 Stevens Building

FROM: W. L. Johnson CHAIRMAN: G. C. Henckel

Dept-Operation-Component	Area	Shift	Meeting Dates	Number Attending
Environmental Engineering	3000	Day	March 1, 1993	11

Distribution

State of Washington Department of Ecology
J. Donnelly*
L. Goldstein
D. Goswami
R. L. Hibbard
J. Phillips
D. D. Teel
N. Uziemblo
J. Yokel
T. Wooley*

U.S. Army Corps of Engineers
J. T. Stewart A5-20

U.S. Department of Energy, Richland Field Office
H. L. Chapman A5-19
J. K. Erickson A5-19
E. D. Goller A5-19
R. G. McLeod A5-19
P. M. Pak A5-19
R. K. Stewart* A5-19

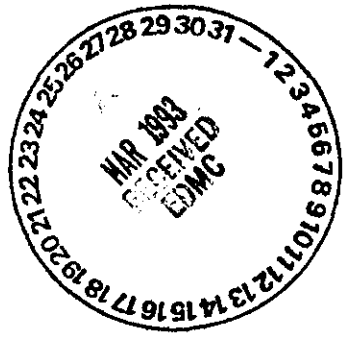
Dames & Moore
Karen Jones

U.S. Environmental Protection Agency
P. R. Beaver* B5-01
D. R. Einan
D. A. Faulk*
L. E. Gadbois
P. S. Innis*
D. R. Sherwood*

Westinghouse Hanford Company
L. D. Arnold B2-35
M. V. Berriochoa B3-30
H. D. Downey* H6-27
W. F. Heine B2-35
G. C. Henckel* H6-04
W. L. Johnson H6-04
J. K. Patterson* H6-27
D. L. Sickle H6-27
T. M. Wintczak H6-27
EDMC H6-08
ERAG Route H6-04
GCH File/LB

*Attendees

The weekly interface meetings on the expedited response actions (ERAs) was held to status the ERAs for the U.S. Department of Energy, Richland Field Office and the regulators. The meeting was conducted in accordance with the attached agenda. Actions were formally reviewed and the attached action item list was updated. The weekly report is also attached.



All seven ERAs were discussed and their status summarized. RL provided a listing of ROD abstracts related to sanitary landfills to partially satisfy the HQ action item.

The agreement form issued 2/22/93 concerning data validation for the White Bluffs Pickling Acid Crib ERA was approved. A general description of the revised alternatives for the Riverland ERA Proposal were discussed.

Attachments:
1. Agenda
2. Action Item List
3. Decisions, Agreements & Commitments dated 2/22/93 signed 3/1/93
4. Expedited Response Action Weekly Report, week ending 02/28/93
5. Revised Radiation Results for Riverland ERA
6. Abstracts for Sanitary Landfills

WEEKLY ERA INTERFACE AGENDA

SUBJECT: STATUS OF THE EXPEDITED RESPONSE ACTIONS

DATE: March 1, 1993

- GENERAL ISSUES
  - ERA Interface Action Item review
- INDIVIDUAL PROJECT STATUS
  - North Slope
    - o Sampling completed
  - Sodium Dichromate
    - o Action Memorandum?
    - o Waste Plan
  - N-Springs
    - o Preparation of EE/CA continues
  - Pickling Acid Crib
    - o Rad data tentative for week of 3/1/93
  - Riverland
    - o Preparation of revised EE/CA
  - 618-11
  - 200-W Carbon Tetrachloride
    - o 24-hour operation ongoing 3000# to date
    - o GAC release letter being revised
    - o Drilling continues - 16K - 20K ppm 299-W15-218
    - o On schedule for 3/31/93 3000 cfm operation
  - 316-5 & 618-9
    - o Status of closure reports
- OTHER ISSUE
- SUMMARY OF ACTION ITEMS
- SIGN-OFF ON ANY DECISIONS, AGREEMENTS, OR COMMITMENTS

EXPEDITED RESPONSE ACTION INTERFACE MEETING

-ACTION ITEMS-
March 1, 1993

ORGANIZATION	ACTION ITEM
WHC	WHC will provide RL, EPA, and Ecology copies of the GPR reports for the Riverland ERA site when it becomes available. (open) North Slope, Sodium Dichromate, and Pickling Acid reports have been provided. (open)
EPA/Ecology	Provide information on passive emissions for CCl_4. (*closed*)
EPA/Ecology	Develop procedure for inclusion in TPA handbook for transmittal of field information and sample data obtained by regulators during split sampling activities. (open)
DOE-HQ	DOE-HQ will provide information regarding sanitary landfill Record of Decisions and risk assessment screening related to federal activities. (open)
RL/WHC	RL to provide modeling presentation on 2/22/93. *(closed)*

EXPEDITED RESPONSE ACTION INTERFACE MEETING

-DECISIONS, AGREEMENTS, & COMMITMENTS-
February 22, 1993

AGREEMENTS:

Validation of sample data from the White Bluffs Pickling Acid Crib expedited response action.

Data will be used to make decisions regarding final site disposition. Validation required to prove that sample data is appropriate for this purpose is as follows:

Metals-100% Validation, Level 4
Anions: Fluoride, Chloride, Phosphate, Sulfate, Nitrate/Nitrite - 100 % Validation Level 4
VOA-100% Level 4 Validation of Case 12-018. Level 2 validation of remaining cases.
Semi-VOA - 100% Level 4 Validation of Case 12-018. Level 2 validation of remaining cases.
Gamma Spec - Level 2 validation of 20% of samples.
Calcium Carbonate, TPH, - no validation (were RCRA, not contaminants of concern, just used as a check)
pH - verify calibration (lab data was consistent with field measurements)

Robert K Stewart 3/1/93
DOE Representative

Pamela A Innis 03/01/93
ERA Representative

ECOLOGY Representative

3-1-93
WHC Representative

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Weekly Report, Week Ending February 28, 1993
EXPEDITED RESPONSE ACTIONS
Technical and Management Contact - Wayne L. Johnson, 376-1721
Environmental Division

North Slope Expedited Response Action - Test pit sampling of two dry wells at Nike missile position H-83-C was conducted on February 26, 1993. An earlier sampling attempt using the auger drill rig failed to locate the wells. Geophysical survey of the area failed to explicitly locate the wells but did depict several of the utility lines providing power and water to buildings in the vicinity. These utilities also appeared on the engineering drawings for the facilities. The locations of the dry wells was then deciphered using these two pieces of information (Note: The engineering drawings for the site are not as-built drawings).

A review of DOE order 4300.1C, "Real Property Management," indicates that land described as public domain prior to RL (or the Atomic Energy Commission) ownership is to be transferred to the Department of Interior when no longer needed by RL. Land that was purchased from private parties is to be excised by the GSA.

Preparation of the ERA Proposal continues. Data continues to arrive from the analytical labs. Initial review of the data indicated no elevated levels of contaminants.

N-Springs Expedited Response Action - Preparation of the ERA proposal continues and is on schedule. A presentation of the alternative screening process and groundwater models used in developing the EE/CA was made at the February 22, 1993, ERA weekly interface meeting. Draft chapters of the proposal have been received.

618-11 Burial Ground Expedited Response Action - PNL employees have completed review of 325 lab notebooks with the summary letter reporting the findings due in approximately two weeks. The 327 building does not appear to have disposed of NaK wastes in the 618-11 caissons. The NAK material handled at that time was reportedly reacted and disposed of down the radioactive liquid waste system.

DOE-ERD/ERB has determined that all required environmental monitoring for the 618-11 ERA be coordinated under the direction of DOE-QSH/PSM due to the breadth of stakeholder interests. Safety documentation development continues with difficulty in developing a plausible worst case accident scenario due to the ambiguity of transuranic, fissile, and chemical content. Records appear to indicate very green fuel was being handled in some cases meaning dose rates should or could be substantially less than thirty years ago. A national and an international search for packaging is in progress. Evaluations of casks will follow, and draft of the report should be ready by March 15, 1993. A March 5, 1993, meeting with RL personnel to discuss the HDW-EIS and NEPA requirements for this project has been scheduled.

Sodium Dichromate Expedited Response Action - The EPA and Ecology are developing responses to public comments and will prepare the action memorandum in accordance internal procedures. (No change in status)

<u>Riverland Expedited Response Action</u> - The corrected radioactive analytical lab data has been received. The EE/CA is being revised to reflect the changes necessary due to the lab data.

<u>White Bluffs Pickling Acid Crib Expedited Response Action</u> - The first sample results are now beginning to arrive. The radioactive analytical data is anticipated to be received during the week of March 1, 1993. Initial data was provided to the regulators on February 22, 1993. Per request of the EPA, groundwater data is being researched to determine if the cribs have contributed to the 100-F area groundwater contamination (nitrates, TCE).

<u>200 West Carbon Tetrachloride Expedited Response Action</u> -

A. Well Field Design

Drilling began February 3, 1993, on the first of five vapor extraction wells to enhance the existing wellfield. Well 299-W15-218, being drilled on the north side of the 216-Z-9 Trench, was at 112 ft depth (just above the caliche) on February 23, 1993. A SEAMIST sample collected from 112 ft was analyzed using a gas chromatograph; carbon tetrachloride (CCl_4) concentrations were 16,000 - 20,000 ppm.

Baseline Monitoring - Monitoring on Friday February 19, 1993, occurred during a period of very low barometric pressure (28.71 in. Hg). Wellhead measurements were very high at the Z-9 and Z-1A areas and significant at the Z-18 and Z-12 areas. Only nine wellheads at the above-mentioned areas did not have detectable VOCs. At Z-9 one well (299-W15-82) exceeded 10,000 ppm VOCs and six others had detections in the hundreds of parts per million. There were detections of VOCs at wells recently added to the monitoring network. At the 216-T-tile field one well detected 21 ppm VOCs. West of TX and TY tank farms two wells detected 9 and 2 ppm VOCs. Two wells in the T Tank farm area detected 2 ppm VOCs.

B. Site Characterization (with VOC-Arid ID)

Source Term Characterization. The camera was retrieved from line 840 on February 23, 1993. It had high levels of alpha contamination. When the camera lens was wiped clean, a sample of the sludge-like material was saved for analysis. Another attempt was made to advance a camera in line 840 by pushing a plug ahead of the camera to keep the liquid substance away from the lens. However, two to three feet beyond the original point of advancement, the liquid substance became too deep and the lens was again coated. Staff from Engineering Surveillance and Testing are investigating the costs to analyze the sludge sample. They are also formulating a plan to use ultrasonic testing on the outside of the 18-in-long pipe lengths inside PFP to determine pit depth. A meeting is being planned for next week between ES&T and ERA personnel to determine the best next step.

Crib Boreholes - Deepening of 299-W18-96 within 216-Z-18 began February 10, 1993. The initial depth was 80 ft; the current (February 23, 1993) depth is 137 ft. The caliche (and total depth) is anticipated at approximately 145 ft. These wells will be modified for vapor extraction.

C. ERA Implementation

Leased 500 cfm VES - The 500 cfm unit leased from H2 Oil Recovery Equipment, Inc., arrived on site February 23, 1993 and was delivered to the Z-9 operations area on February 25, 1993. The arrival of this unit replaces the need for the back-up blower and motor, which will now likely be used for the upgrade of the existing unit at Z-1 crib to 1000 cfm.

Start-up of the leased 500 cfm VES unit will be delayed approximately one week due to the recent cold weather that has created problems with craft availability for electrical, instrument, and pipefitter work that is required to make the system operational. (SAD)

New 1500 cfm Vapor Extraction System - The CCl_4 ERA Team made a trip to Barnebey & Sutcliffe this past week to attend training and complete the factory acceptance test. The system is on schedule for a March 15, 1993 delivery to the Z-9 Operations area.

Vapor Extraction System (VES) Operations - The recent cold weather has created some operational problems with the freezing of condensed water in the well hoses and intake manifold. Ice was removed from the intake manifold and the system was restarted February 18, 1993. The system is operating at 300 cfm due to continued flow interlock shut-downs that have been occuring at the full flow capacity of 500 cfm.

Operational Date	Source	Amount of CCl_4 Removed (lb)	Average CCl_4 Conc. (ppm)	Total Operational Time (hr)	Average Flowrate (SCFM)
2/8 - 2/11	216-Z-1A	98	200	46.15	450
2/16 - 2/23	216-Z-1A	146	230	80.9	300
Totals		244	215	127.05	375

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EcoTek LSI
EcoTek Laboratory Services Incorporated

GAMMA ISOTOPIC

Client: Weston **Client Reference No.:** 9210L504
LSDG: 21303 **Date Received:** 12/4/92

Lab Sample ID	Hanford Sample ID	Weston Sample ID	Date Sampled	Date Analyzed	Analyte	Matrix	Result pCi/g	2 Sigma Error pCi/g	Detection Limit pCi/g
2130301	B01928	001	10/28/92	2/8/93	Cadmium-109	Soil	1.21E+00	3.54E-01	3.32E-01
2130301	B01928	001	10/28/92	2/8/93	Cobalt - 58	Soil	ND	NA	4.53E-02
2130301	B01928	001	10/28/92	2/8/93	Iron - 59	Soil	ND	NA	1.74E-01
2130301	B01928	001	10/28/92	2/8/93	Cobalt - 60	Soil	ND	NA	2.09E-02
2130301	B01928	001	10/28/92	2/8/93	Cesium - 134	Soil	ND	NA	1.96E-02
2130301	B01928	001	10/28/92	2/8/93	Cesium - 137	Soil	3.78E-02	2.18E-02	2.08E-02
2130301	B01928	001	10/28/92	2/8/93	Cerium - 144	Soil	ND	NA	1.16E-01
2130301	B01928	001	10/28/92	2/8/93	Europium - 152	Soil	ND	NA	1.15E-01
2130301	B01928	001	10/28/92	2/8/93	Europium - 154	Soil	ND	NA	2.58E-02
2130301	B01928	001	10/28/92	2/8/93	Europium - 155	Soil	ND	NA	5.17E-02
2130301	B01928	001	10/28/92	2/8/93	Radium - 223	Soil	Half - Life too short		
2130301	B01928	001	10/28/92	2/8/93	Radium - 224	Soil	Half - Life too short		
2130301	B01928	001	10/28/92	2/8/93	Radium - 226	Soil	5.43E-01	9.64E-02	3.51E 02
2130301	B01928	001	10/28/92	2/8/93	Thorium-232	Soil	1.78E 01	4.85E-02	3.55E-02
2130302	B01929	002	10/28/92	2/8/93	Cobalt - 58	Soil	ND	NA	7.77E-02
2130302	B01929	002	10/28/92	2/8/93	Iron - 59	Soil	ND	NA	2.63E-01
2130302	B01929	002	10/28/92	2/8/93	Cobalt - 60	Soil	ND	NA	2.91E-02
2130302	B01929	002	10/28/92	2/8/93	Cesium - 134	Soil	ND	NA	3.01E-02
2130302	B01929	002	10/28/92	2/8/93	Cesium - 137	Soil	1.80E-01	4.45E-02	3.28E-02
2130302	B01929	002	10/28/92	2/8/93	Cerium - 144	Soil	ND	NA	1.85E-01
2130302	B01929	002	10/28/92	2/8/93	Europium - 152	Soil	ND	NA	1.52E-01
2130302	B01929	002	10/28/92	2/8/93	Europium - 154	Soil	ND	NA	3.97E-02
2130302	B01929	002	10/28/92	2/8/93	Europium - 155	Soil	ND	NA	7.91E-02
2130302	B01929	002	10/28/92	2/8/93	Radium - 223	Soil	Half - Life too short		
2130302	B01929	002	10/28/92	2/8/93	Radium - 224	Soil	Half - Life too short		
2130302	B01929	002	10/28/92	2/8/93	Radium - 226	Soil	5.02E-01	1.18E-01	6.02E-02
2130302	B01929	002	10/28/92	2/8/93	Thorium-232	Soil	1.71E-01	6.24E-02	5.34E-02
2130303	B01930	003	10/29/92	2/8/93	Cadmium-109	Soil	1.26E+00	5.27E-01	5.09E-01
2130303	B01930	003	10/29/92	2/8/93	Cobalt - 57	Soil	1.65E-01	3.17E-02	2.40E-02
2130303	B01930	003	10/29/92	2/8/93	Cobalt - 58	Soil	ND	NA	8.06E-02
2130303	B01930	003	10/29/92	2/8/93	Iron - 59	Soil	ND	NA	2.98E-01
2130303	B01930	003	10/29/92	2/8/93	Cobalt 60	Soil	1.55E 01	4.21E-02	3.51E-02
2130303	B01930	003	10/29/92	2/8/93	Cesium - 134	Soil	ND	NA	3.17E 02
2130303	B01930	003	10/29/92	2/8/93	Cesium - 137	Soil	1.05E-01	4.58E-02	3.86E-02
2130303	B01930	003	10/29/92	2/8/93	Cerium - 144	Soil	ND	NA	1.79E-01

ND = Not Detected Above MDA

NA – Not Applicable

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GAMMA ISOTOPICS

Client: Weston
LSDG: 21303

Client Reference No.: 9210L904
Date Received: 12/4/92

Lab Sample ID	Hanford Sample ID	Weston Sample ID	Date Sampled	Date Analyzed	Analyte	Matrix	Results pCi/g	2 Sigma Error pCi/g	Detection Limit pCi/g
2130303	B01930	003	10/29/92	2/8/93	Europium - 152	Soil	4.99E-01	1.95E-01	1.68E-01
2130303	B01930	003	10/29/92	2/8/93	Europium - 154	Soil	ND	NA	4.79E-02
2130303	B01930	003	10/29/92	2/8/93	Europium - 155	Soil	ND	NA	7.42E 02
2130303	B01930	003	10/29/92	2/8/93	Potassium-40	Soil	7.19E+00	1.07E+00	3.30E-01
2130303	B01930	003	10/29/92	2/8/93	Radium - 223	Soil	Half - Life too short		
2130303	B01930	003	10/29/92	2/8/93	Radium - 224	Soil	Half - Life too short		
2130303	B01930	003	10/29/92	2/8/93	Radium - 226	Soil	5.25E-01	1.12E-01	6.53E-02
2130304	B01931	004	10/29/92	2/8/93	Cobalt - 57	Soil	1.44E-01	2.33E-02	1.71E-02
2130304	B01931	004	10/29/92	2/8/93	Cobalt - 58	Soil	ND	NA	8.38E-02
2130304	B01931	004	10/29/92	2/8/93	Iron - 59	Soil	ND	NA	3.46E-01
2130304	B01931	004	10/29/92	2/8/93	Cobalt - 60	Soil	1.78E-01	4.72E-02	3.99E-02
2130304	B01931	004	10/29/92	2/8/93	Cesium - 134	Soil	ND	NA	3.39E-02
2130304	B01931	004	10/29/92	2/8/93	Cesium - 137	Soil	ND	NA	3.25E-02
2130304	B01931	004	10/29/92	2/8/93	Cerium - 144	Soil	ND	NA	1.06E-01
2130304	B01931	004	10/29/92	2/8/93	Europium - 152	Soil	4.82E-01	2.18E-01	1.93E-01
2130304	B01931	004	10/29/92	2/8/93	Europium - 154	Soil	ND	NA	4.95E-02
2130304	B01931	004	10/29/92	2/8/93	Europium - 155	Soil	ND	NA	7.44E-02
2130304	B01931	004	10/29/92	2/8/93	Potassium-40	Soil	8.08E+00	1.13E+00	4.92E-01
2130304	B01931	004	10/29/92	2/8/93	Radium - 223	Soil	Half - Life too short		
2130304	B01931	004	10/29/92	2/8/93	Radium - 224	Soil	Half - Life too short		
2130304	B01931	004	10/29/92	2/8/93	Radium-226	Soil	5.58E-01	1.09E-01	6.90E-02
2130304	B01931	004	10/29/92	2/8/93	Thorium-232	Soil	2.08E-01	7.15E-02	6.19E-02
2130305	B01933	005	10/29/92	2/8/93	Cadmium-109	Soil	1.33E+00	5.43E-01	5.19E-01
2130305	B01933	005	10/29/92	2/8/93	Cobalt - 58	Soil	ND	NA	7.71E-02
2130305	B01933	005	10/29/92	2/8/93	Iron - 59	Soil	ND	NA	3.18E-01
2130305	B01933	005	10/29/92	2/8/93	Cobalt - 60	Soil	ND	NA	3.17E-02
2130305	B01933	005	10/29/92	2/8/93	Cesium - 134	Soil	ND	NA	2.97E-02
2130305	B01933	005	10/29/92	2/8/93	Cesium - 137	Soil	3.15E-01	6.35E-02	4.26E-02
2130305	B01933	005	10/29/92	2/8/93	Cerium - 144	Soil	ND	NA	1.73E-01
2130305	B01933	005	10/29/92	2/8/93	Europium - 152	Soil	ND	NA	1.74E-01
2130305	B01933	005	10/29/92	2/8/93	Europium - 154	Soil	ND	NA	3.59E-02
2130305	B01933	005	10/29/92	2/8/93	Europium - 155	Soil	ND	NA	7.42E-02
2130305	B01933	005	10/29/92	2/8/93	Potassium-40	Soil	9.84E+00	1.26E+00	3.73E-01
2130305	B01933	005	10/29/92	2/8/93	Radium - 223	Soil	Half - Life too short		
2130305	B01933	005	10/29/92	2/8/93	Radium - 224	Soil	Half - Life too short		
2130305	B01933	005	10/29/92	2/8/93	Radium-226	Soil	5.39E-01	1.07E-01	5.43E-02
2130305	B01933	005	10/29/92	2/8/93	Thorium-232	Soil	2.97E-01	7.36E-02	5.69E-02

ND = Not Detected Above MDA
NA – Not Applicable

EcoTek LSI
EcoTek Laboratory Services Incorporated

GAMMA ISOTOPICS

Client: Weston
LSDG: 21303

Client Reference No.: 9210L504
Date Received: 12/4/92

Lab Sample ID	Halford Sample ID	Weston Sample ID	Date Sampled	Date Analyzed	Analyte	Matrix	Result pCi/g	2 Sigma Error +/- pCi/g	Detection Limit pCi/g
2130306	B01934	006	10/29/92	2/8/93	Cobalt - 58	Soil	ND	NA	5.48E-02
2130306	B01934	006	10/29/92	2/8/93	Iron - 59	Soil	ND	NA	2.07E-01
2130306	B01934	006	10/29/92	2/8/93	Cobalt - 60	Soil	ND	NA	2.04E-02
2130306	B01934	006	10/29/92	2/8/93	Cesium - 134	Soil	ND	NA	2.03E-02
2130306	B01934	006	10/29/92	2/8/93	Cesium - 137	Soil	ND	NA	2.13E-02
2130306	B01934	006	10/29/92	2/8/93	Cerium - 144	Soil	ND	NA	1.29E-01
2130306	B01934	006	10/29/92	2/8/93	Europium - 152	Soil	ND	NA	1.03E-01
2130306	B01934	006	10/29/92	2/8/93	Europium - 154	Soil	ND	NA	2.66E-02
2130306	B01934	006	10/29/92	2/8/93	Europium - 155	Soil	ND	NA	5.65E-02
2130306	B01934	006	10/29/92	2/8/93	Potassium-40	Soil	1.03E+00	4.47E-01	2.55E-01
2130306	B01934	006	10/29/92	2/8/93	Radium - 223	Soil	Half - Life too Short		
2130306	B01934	006	10/29/92	2/8/93	Radium - 224	Soil	Half - Life too Short		
2130307	B01935	007	10/29/92	2/8/93	Cobalt - 57	Soil	6.76E-01	7.15E-02	2.80E-02
2130307	B01935	007	10/29/92	2/8/93	Cobalt - 58	Soil	ND	NA	1.19E-01
2130307	B01935	007	10/29/92	2/8/93	Iron - 59	Soil	ND	NA	4.21E-01
2130307	B01935	007	10/29/92	2/8/93	Cobalt - 60	Soil	3.82E-01	6.22E-02	3.61E-02
2130307	B01935	007	10/29/92	2/8/93	Cesium - 134	Soil	ND	NA	4.87E-02
2130307	B01935	007	10/29/92	2/8/93	Cesium - 137	Soil	1.96E+01	2.36E+00	7.38E-02
2130307	B01935	007	10/29/92	2/8/93	Cerium - 144	Soil	ND	NA	2.81E-01
2130307	B01935	007	10/29/92	2/8/93	Europium - 152	Soil	1.91E+00	3.50E-01	2.18E-01
2130307	B01935	007	10/29/92	2/8/93	Europium - 154	Soil	1.31E-01	4.82E-01	5.34E-02
2130307	B01935	007	10/29/92	2/8/93	Europium - 155	Soil	ND	NA	1.27E-01
2130307	B01935	007	10/29/92	2/8/93	Potassium-40	Soil	7.72E+00	1.10E+00	4.15E-01
2130307	B01935	007	10/29/92	2/8/93	Radium - 223	Soil	Half - Life too short		
2130307	B01935	007	10/29/92	2/8/93	Radium - 224	Soil	Half - Life too short		
2130307	B01935	007	10/29/92	2/8/93	Radium - 226	Soil	3.44E-01	1.33E-01	1.19E-01

ND = Not Detected Above MDA
NA = Not Applicable

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ABSTRACTS FOR SANITARY LANDFILLS
Order number 930121-143209-ROD -001-001
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Item 1

REGION :2
SITE NAME :BURNT FLY BOG
LOCATION :MARLBORO TOWNSHIP, NJ
NTIS REPORT #:EPA/ROD/R02-83/002
ROD DATE :831116
ABSTRACT :

THE BURNT FLY BOG SITE IS LOCATED IN MARLBORO TOWNSHIP, MONMOUTH COUNTY AND OLD BRIDGE TOWNSHIP, MIDDLESEX COUNTY, NEW JERSEY. BETWEEN 1950 AND 1956, THE SITE HAD BEEN USED FOR LAGOON STORAGE AND SETTLING OF REPROCESSED OIL, STORAGE OF FILTER CLAY FROM OIL REPROCESSING OPERATIONS, SANITARY LANDFILLING, AND SAND AND GRAVEL PIT OPERATIONS. DURING THESE OPERATIONS, HAZARDOUS SUBSTANCES WERE IMPROPERLY DISPOSED OF RESULTING IN CONTAMINATION THROUGHOUT THE 60-ACRE STUDY AREA.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES; EXCAVATION AND DISPOSAL OF OFF-SITE LIQUIDS, SLUDGES, ASPHALT PILES, DRUMS, CONTAMINATED SOIL FROM LAGOONS AND WETLANDS, RESTORE SITE CONTOURS AND VEGETATION; MONITOR GROUND WATER FOR 5-YEAR PERIOD. THE APPROACH IS A THREE-PHASE ACTION.

CAPITAL COSTS FOR THE SELECTED ALTERNATIVE ARE ESTIMATED AT $2,200,000 FOR PHASE I, $5,110,000 FOR PHASE II AND $60,000 PER YEAR FOR OPERATION AND MAINTENANCE.

REMEDY :

1. PHASE I REMEDIAL ACTION
   - DESIGN AND IMPLEMENTATION OF THE EXCAVATION AND OFF-SITE DISPOSAL OF HAZARDOUS SUBSTANCES IN LAGOON 1, THE ASPHALT PILE AREA, THE TAR PATCH AREA AND THE DRUMMED WASTE AREA. CONTAMINATED LAGOON WATER WILL BE DISPOSED OF AT A COMMERCIAL TREATMENT FACILITY WHILE DRUMMED LIQUID WASTE WILL BE INCINERATED. THE TAR PATCH WASTE WILL BE DISPOSED OF AT AN OFF-SITE INTERMEDIATE SLUDGE LANDFILL WHILE LAGOON 1 SLUDGE, ASPHALT PILE AREA WASTE AND THE DRUMMED SOLID WASTE WILL BE DISPOSED OF AT AN OFF-SITE SECURE CHEMICAL LANDFILL. ALL DISPOSAL FACILITIES ARE IN COMPLIANCE WITH SUBTITLE C OF RCRA.
   - DESIGN OF THE EXCAVATION AND REMOVAL OF HAZARDOUS SUBSTANCES IN LAGOONS 2, 3 AND 4, THE NORTHERLY WETLANDS AND THE CONTAMINATED SOILS AREA.
   - DESIGN OF A SITE RESTORATION PLAN.
   - DESIGN OF A COMPREHENSIVE 5-YEAR GROUNDWATER MONITORING PROGRAM. THIS WILL INCLUDE TESTING OF 8 AREA RESIDENTIAL WELLS.
   - FURTHER STUDY OF THE WESTERLY WETLANDS TO DETERMINE THE EXTENT OF CONTAMINATION IN THIS AREA.
2. PHASE 2 REMEDIAL ACTION
   - IMPLEMENTATION OF THE EXCAVATION AND OFF-SITE DISPOSAL OF HAZARDOUS SUBSTANCES IN LAGOONS 2, 3 AND 4, THE NORTHERLY WETLANDS AND THE CONTAMINATED SOILS AREA. THE HAZARDOUS SUBSTANCES SHALL

SHALL BE DISPOSED OF AT AN OFF-SITE SECURE CHEMICAL LANDFILL THAT LANDFILL THAT IS IN COMPLIANCE WITH SUBPART C OF RCRA.
- RESTORATION OF ORIGINAL SITE CONTOURS AND REVEGETATION OF THE AREA.

Item 2

REGION :5
SITE NAME :KUMMER LANDFILL
LOCATION :NORTHERN TOWNSHIP, MN
NTIS REPORT #:EPA/ROD/R05-85/014
ROD DATE :850612
ABSTRACT :

THE KUMMER SANITARY LANDFILL OCCUPIES APPROXIMATELY 40 ACRES IN THE SOUTHERN PORTION OF NORTHERN TOWNSHIP, BELTRAMI COUNTY, MINNESOTA. THE SITE WAS OPERATED AS A SOLID WASTE FACILITY FROM 1971 UNTIL OCTOBER 1, 1984. DURING THE PERIOD OF OPERATIONS, MUNICIPAL REFUSE, DEMOLITION DEBRIS, AND INDUSTRIAL WASTE WERE ACCEPTED AT THE SITE. HOWEVER, THE DISPOSAL OF HAZARDOUS WASTES WAS NEVER DOCUMENTED AT ANY TIME DURING OPERATIONS. THE LANDFILL IS SITUATED ABOVE A SHALLOW SURFICIAL SAND AQUIFER WHICH SERVES NUMEROUS DOWNGRADIENT PRIVATE WELLS EAST AND SOUTHEAST OF THE LANDFILL. AT PRESENT, THE KUMMER SANITARY LANDFILL APPEARS TO BE THE MAJOR SOURCE OF VOLATILE ORGANIC CONTAMINATION FOUND IN PRIVATE DRINKING WATER WELLS IN THE AREA.

THE SELECTED REMEDIAL ACTION INCLUDES PROVISIONS FOR AN ALTERNATE WATER SUPPLY. THESE PROVISIONS CONSIST OF CONSTRUCTING TWO WELLS IN A DEEP UNCONTAMINATED AQUIFER, A WATER TOWER AND DISTRIBUTION SYSTEM. TOTAL CAPITAL COST FOR THE SELECTED REMEDIAL ALTERNATIVE IS ESTIMATED TO BE $1,624,850 WITH O&M COSTS ESTIMATED TO BE AN ADDITIONAL $28,440 PER YEAR.

REMEDY :
- PROVISIONS FOR AN ALTERNATE WATER SUPPLY FOR THE AFFECTED RESIDENTS IN NORTHERN TOWNSHIP, MINNESOTA CONSISTING OF CONSTRUCTING TWO WELLS IN A DEEP UNCONTAMINATED AQUIFER, A WATER TOWER AND DISTRIBUTION SYSTEM. THE LOCATION OF THE NEW WELLS WILL BE IN AN AREA UNAFFECTED BY THE LANDFILL.
- FIRST YEAR OPERATION & MAINTENANCE COSTS TO PROVIDE THE LABOR, POWER AND CHEMICAL SUPPLIES FOR THE RECOMMENDED ALTERNATIVE.

Item 3

REGION :4
SITE NAME :DAVIE LANDFILL
LOCATION :DANIA, FL
NTIS REPORT #:EPA/ROD/R04-85/005
ROD DATE :850930
ABSTRACT :

THE BROWARD COUNTY SOLID WASTE DISPOSAL FACILITY (A.K.A. DAVIE LANDFILL) IS LOCATED 10 MILES SOUTHWEST OF FORT LAUDERDALE, FLORIDA NEAR THE INTERSECTION OF ORANGE DRIVE AND BOY SCOUT ROAD. THE LANDFILL

AREA INCLUDES A 50-ACRE GARBAGE LANDFILL, AN 80-ACRE TRASH LANDFILL AND A 56-ACRE SLUDGE LAGOON. THE FACILITY BEGAN OPERATION IN 1964 ACCEPTING TRASH AND ASH FROM THE COUNTY'S ADJACENT GARBAGE INCINERATOR. IN NOVEMBER 1971, THE LAGOON WAS CREATED IN AN UNLINED NATURAL DEPRESSION ONSITE. GREASE TRAP PUMP-OUTS AND SEPTIC TANK AND TREATED MUNICIPAL SLUDGES WERE DISPOSED IN THE LAGOON WHICH CONTAINS AN ESTIMATED 75,000 CUBIC YARDS OF SLUDGE. INITIAL SAMPLING OF THE LAGOON CONTENTS CHARACTERIZE THE WASTE AS BEING IN THE HIGH RANGE OF TYPICAL WASTEWATER TREATMENT PLANT SLUDGE HAZARDOUS CONSTITUENTS. IN ADDITION, CONCERNS HAVE BEEN RAISED ABOUT THE RELATIVELY HIGH CYANIDE AND SULFIDE CONCENTRATIONS DETECTED.

THE SELECTED REMEDIAL ACTION INCLUDES DEWATERING AND STABILIZATION OF THE SLUDGE LAGOON CONTENTS AND PLACEMENT IN A SINGLE-LINED SANITARY LANDFILL CELL; AND INSTALLATION OF A CAP ON THE CELL THAT MEETS THE REGULATORY REQUIREMENTS OF 40 CFR 264.310(A). THIS ROD ADDRESSES ONLY SOURCE CONTROL MEASURES. THE DECISION CONCERNING CLEANUP OF GROUNDWATER CONTAMINATION WILL BE MADE FOLLOWING AN EVALUATION OF THESE ACTIONS AND MONITORING DATA. TOTAL CAPITAL COST FOR THE SELECTED REMEDIAL ACTION IS ESTIMATED TO BE $3.0-$3.7 MILLION WITH ANNUAL O&M COSTS OF $100,000.

REMEDY :

- DEWATERING AND STABILIZATION OF THE SLUDGE LAGOON CONTENTS AND PLACEMENT IN SINGLE LINED SANITARY LANDFILL CELL #14.
- INSTALLATION OF A CAP ON CELL #14 THAT MEETS THE REGULATORY REQUIREMENTS OF 40 CFR 264.310(A).

Item 4

REGION :10
SITE NAME :COLBERT LANDFILL
LOCATION :COLBERT, WA
NTIS REPORT #:EPA/ROD/R10-87/010
ROD DATE :870929
ABSTRACT :

THE COLBERT LANDFILL, A 40-ACRE COUNTY-OWNED SANITARY LANDFILL IS LOCATED IN SPOKANE COUNTY, WASHINGTON. FROM 1968 THROUGH 1986, THE LANDFILL RECEIVED BOTH MUNICIPAL AND COMMERCIAL WASTES. DURING FIVE YEARS, FROM 1975 TO 1980, A LOCAL ELECTRONICS MANUFACTURING COMPANY, KEY TRONIC CORPORATION, DISPOSED OF SEVERAL HUNDRED GALLONS PER MONTH OF SPENT ORGANIC SOLVENTS, MAINLY METHYLENE CHLORIDE AND 1,1,1-TRICHLOROETHANE (TCA) AT THE LANDFILL. THESE WASTES WERE TYPICALLY BROUGHT TO THE LANDFILL IN DRUMS AND POURED DOWN THE SIDES OF OPEN TRENCHES TO MIX WITH THE SOIL OR ORDINARY MUNICIPAL REFUSE ALREADY IN THE TRENCH. DURING THE SAME PERIOD, FAIRCHILD AIR FORCE BASE, DISPOSED OF VARIOUS SOLVENT WASTES AT THE SITE. PESTICIDES AND REFINERY TAR RESIDUES WERE ALSO DISPOSED ON SITE, BUT TO DATE, THESE CONTAMINANTS HAVE NOT BEEN DETECTED IN THE GROUND WATER. IN 1980, NEARBY RESIDENTS COMPLAINED TO THE EASTERN REGIONAL OFFICE OF THE WASHINGTON DEPARTMENT OF ECOLOGY ABOUT THESE DISPOSAL PRACTICES. INVESTIGATION OF THESE COMPLAINTS LED TO THE DISCOVERY OF NEARBY PRIVATE WELL CONTAMINATION WITH TCA. IN JUNE 1984, AN INITIAL REMEDIAL MEASURE (IRM) WAS DEVELOPED

TO EXTEND THE PUBLIC WATER SUPPLY MAINS TO AFFECTED RESIDENTS. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE GROUND WATER INCLUDE; VOCS, TCA,1,1-DICHLOROETHYLENE, 1,1-DICHLOROETHANE, TRICHLOROETHYLENE TCE, TETRACHLOROETHYLENE, METHYLCHLORIDE.

THE SELECTED REMEDIAL ACTION INCLUDES; INSTALLATION AND OPERATION OF INTERCEPTION AND EXTRACTION WELLS; ONSITE GROUND WATER TREATMENT; AND IMPLEMENTATION OF AN ALTERNATE WATER SUPPLY. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDY IS $24,000,000.

REMEDY :

THIS RECORD OF DECISION ADDRESSES MANAGEMENT OF THE MIGRATION OF CONTAMINATION USING A GROUNDWATER INTERCEPTION SYSTEM AND ATTEMPTS SOURCE CONTROL THROUGH EXTRACTION IN THE AREAS OF HIGHEST CONTAMINANT CONCENTRATIONS.

THE REMEDY IS DESIGNED TO;

- PREVENT FURTHER SPREAD OF CONTAMINATED GROUNDWATER IN TWO AQUIFERS BY INSTALLING AND OPERATING INTERCEPTION WELLS,
- REMOVE CONTAMINATED MATERIALS WHICH HAVE ENTERED THE AQUIFERS AND ARE CONTRIBUTING TO THE CONTAMINANT PLUME, BY INSTALLING AND OPERATING EXTRACTION WELLS IN THE AREA WHERE THE PLUMES ORIGINATE,
- REDUCE THE TOXICITY, MOBILITY, AND VOLUME OF THE CONTAMINANTS BY TREATING ALL EXTRACTED GROUNDWATER FROM BOTH INTERCEPTION AND EXTRACTION WELLS, AND
- PROVIDE AN ALTERNATE WATER SUPPLY SYSTEM TO ANY RESIDENTS DEPRIVED OF THEIR DOMESTIC SUPPLY DUE TO DEMONSTRATED CONTAMINATION FROM THE LANDFILL OR DUE TO THE ACTION OF THE EXTRACTION OR INTERCEPTION SYSTEMS.

TREATMENT WILL BE SUFFICIENT TO REDUCE CONTAMINANT LEVELS IN THE AQUIFERS AND IN THE WASTEWATER EFFLUENT TO OR BELOW PERFORMANCE STANDARDS. THESE HAVE BEEN SET AT THE MAXIMUM CONTAMINANT LEVELS (MCLS, 40 CFR 141.61), OR A SIMILARLY DEFINED HEALTH-BASED LEVEL (A 10-6 RISK LEVEL FOR CARCINOGENIC CONSTITUENTS). NUMERIC VALUES FOR THESE PERFORMANCE STANDARDS ARE PRESENTED IN TABLE 1. TREATMENT SHOULD BE PERMANENT, AND SHOULD EFFECTIVELY REDUCE THE TOXICITY, MOBILITY, AND VOLUME OF THE CONTAMINANTS. ANY TREATMENT SYSTEM WHICH WILL PRODUCE AIR EMISSIONS WILL BE DESIGNED TO MEET ANY APPROPRIATE STATE AIR TOXICS GUIDELINES AND TO USE BEST AVAILABLE CONTROL TECHNOLOGY (BACT) ON THE EFFLUENT AIR STREAM.

IN ORDER TO IMPLEMENT THIS REMEDIAL ACTION, ADEQUATE MONITORING WILL BE REQUIRED IN PRIVATE WELLS IN THE AREA OF IMPACT, AS WELL AS IN MONITORING WELLS AS NEEDED TO ASSESS PROGRESS OF THE REMEDIATION AND PERFORMANCE OF THE CONTAINMENT SYSTEM. TREATED WATER EFFLUENTS ALSO WILL BE MONITORED TO ASSURE THAT THEY MEET THE APPROPRIATE PERFORMANCE STANDARDS (TABLE 1). TREATED WATER DISCHARGE SHALL AT ALL TIMES BE CONSISTENT WITH U.S. AND WASHINGTON STATE LAWS INCLUDING BUT NOT LIMITED TO RCW 90.48 (WATER POLLUTION CONTROL) AND WAC 173-218 (UNDERGROUND INJECTION CONTROL PROGRAM). PLUME CONTAINMENT WILL BE CONFIRMED BY INSTALLATION AND PERIODIC SAMPLING OF MONITORING WELLS AND RESIDENTIAL WELLS DOWNGRADIENT OF THE INTERCEPTION ZONE. EXTRACTION WILL CONTINUE UNTIL ALL WELLS IN

CONTAMINATED ZONES SHOW THAT THE CONTAMINANTS FROM THE LANDFILL HAVE BEEN REDUCED TO AND CONSISTENTLY REMAIN BELOW THE HEALTH PROTECTION MAXIMUM LEVELS.

THOSE RESIDENTS WHO ARE DEPRIVED OF DOMESTIC DRINKING WATER, EITHER BECAUSE THEIR WELL WATER QUALITY SHOWS DEMONSTRATED CONTAMINATION FROM THE LANDFILL OR BECAUSE THE QUANTITY AVAILABLE HAS BEEN REDUCED BY THE ACTION OF THE EXTRACTION AND INTERCEPTION SYSTEMS, WILL BE CONNECTED TO AN ADEQUATE SUPPLY OF SAFE DRINKING WATER FOR IN-HOME DOMESTIC USE. THE PRESENT COMMUNITY WATER SYSTEM SERVING THE AREA, THE COLBERT EXTENSION OF THE WHITWORTH WATER DISTRICT NO. 2, MAY REQUIRE UPGRADING TO PROVIDE THESE SUPPLIES. THE SYSTEM WILL BE DESIGNED TO MEET STATE PUBLIC WATER SYSTEM STANDARDS.

INSTITUTIONAL CONTROLS WILL BE DEVELOPED CONSISTENT WITH THE FINAL DESIGN TO ASSURE THAT THE REMEDIAL ACTION WILL CONTINUE TO PROTECT HUMAN HEALTH AND THE ENVIRONMENT. COLBERT LANDFILL WILL BE CLOSED TO MEET STATE MINIMUM FUNCTIONAL STANDARDS FOR LANDFILL CLOSURE (WAC 173-304-460), INCLUDING CAPPING, REGRADING, GROUNDWATER AND GAS MONITORING AND POST-CLOSURE MAINTENANCE.

THIS IS DESIGNED TO BE THE FINAL REMEDIAL ACTION TO BE IMPLEMENTED AT THE COLBERT LANDFILL SITE. IT IS AN INTERIM FINAL ACTION BECAUSE THE EXTRACTION AND INTERCEPTION WELL SYSTEMS WILL BE IN OPERATION FOR DECADES BEFORE REMEDIATION IS COMPLETE AND CHANGES IN THE SELECTED ACTION MAY BE REQUIRED DURING THAT PERIOD. THE DESIGN THEREFORE WILL BE REASSESSED AND ADJUSTED PERIODICALLY, AT INTERVALS NOT TO EXCEED FIVE YEARS. IT BUILDS ON THE INTERIM REMEDIAL MEASURE WHICH PROVIDED ALTERNATE WATER SUPPLY, THROUGH THE COLBERT EXTENSION OF THE WHITWORTH WATER DISTRICT NO. 2, TO RESIDENTS WHOSE WELLS HAD SHOWN CONTAMINATION FROM THE LANDFILL AT LEVELS ABOVE PUBLIC HEALTH CONCERN.

THE PERFORMANCE STANDARDS DESCRIBED ABOVE WILL SERVE BOTH AS MINIMUM TREATMENT LEVELS FOR EFFLUENTS AND AS MAXIMUM RESIDUAL LEVELS FOR GROUNDWATER WITHIN THE CONTAMINANT PLUMES. COMPLETION OF THE TREATMENT REQUIREMENTS IS CONDITIONAL UPON REACHING AND MAINTAINING CONTAMINATION AT CONCENTRATIONS BELOW THESE MAXIMUM RESIDUAL LEVELS. THE TIME REQUIRED FOR THIS REMEDY IS NOT PRESENTLY KNOWN, BUT THE ENTIRE TREATMENT SYSTEM WILL BE REASSESSED BY THE EPA AT INTERVALS NOT TO EXCEED FIVE YEARS.

Item 5

REGION :2
SITE NAME :METALTEC/AEROSYSTEMS
LOCATION :FRANKLIN BORO, NJ
NTIS REPORT #:EPA/ROD/R02-86/025
ROD DATE :860630
ABSTRACT :

THE METALTEC/AEROSYSTEMS SITE IS LOCATED AT THE INTERSECTION OF MAPLE, GIBSON, AND WILDCAT ROADS IN FRANKLIN BOROUGH, SUSSEX COUNTY, NEW JERSEY. THE PROPERTY CONSISTS OF AN ABANDONED MANUFACTURING FACILITY THAT ONCE PRODUCED METAL BALLPOINT PEN CASINGS, PAINT SPRAY

GUNS, LIPSTICK CASES AND OTHER ASSORTED METAL PARTS. THE SITE IS PRESENTLY USED TO ASSEMBLE ICE MACHINES AND THE MANUFACTURE OF GLASSWARE FOR RESEARCH PURPOSES. IN ITS CURRENT STATE, THE SITE CONTAINS SEVERAL SOURCES OF HAZARDOUS SUBSTANCES THAT POSE A THREAT TO PUBLIC HEALTH AND THE ENVIRONMENT. THESE SOURCES INCLUDE A BACK FILLED LAGOON AREA, TWO OPEN AREAS WHICH ADJOIN THE METALTEC BUILDING, AND AN OPEN PARCEL OF LAND LOCATED NEAR THE SWAMP AT THE NORTHEAST CORNER OF THE SITE. THESE PARCELS OF PROPERTY EXHIBIT HIGH LEVELS OF POLLUTANTS AND CONTAMINANTS IN THE SOIL AND THE UNDERLYING GROUND WATER. HAZARDOUS SUBSTANCES DETECTED INCLUDE TRICHLOROETHYLENE, TRANS-1,2-DICHLOROETHENE, VINYL CHLORIDE, AND COPPER.

THE COST-EFFECTIVE REMEDIAL ACTION SELECTED FOR THIS SITE INCLUDES; EXCAVATION AND TREATMENT VIA HEAT ADDITION (ROTARY DRYER) OF APPROXIMATELY 10,000 CUBIC YARDS OF ORGANIC CONTAMINATED SOILS WITHIN PARCEL 1 AND OFFSITE DISPOSAL AT AN APPROVED LANDFILL; EXCAVATION AND OFFSITE DISPOSAL OF APPROXIMATELY 4,000 CUBIC YARDS OF CONTAMINATED SOILS WITHIN PARCELS 2,3, AND 4; PREPARATION OF A SUPPLEMENTAL RI AND FS TO IDENTIFY THE EXTENT OF GROUND WATER CONTAMINATION AND DEVELOP AND EVALUATE APPROPRIATE REMEDIAL ALTERNATIVES; AND PROVISION OF AN ALTERNATE WATER SUPPLY FOR AFFECTED BOROUGH OF FRANKLIN RESIDENTS BY CONSTRUCTING A PIPELINE CONNECTION TO THE BOROUGH OF HAMBURG PUBLIC WATER SUPPLY SYSTEM. THE ESTIMATED CAPITAL COST FOR THE SELECTED ALTERNATIVE WITH DISPOSAL IN A SANITARY LANDFILL IS $7,005,000 AND WITH DISPOSAL IN A RCRA LANDFILL IS $11,735,000. THE ANNUAL O&M COST IS $179,000.

REMEDY :

- EXCAVATION AND TREATMENT VIA HEAT ADDITION (ROTARY DRYER) OF APPROXIMATELY 10,000 CUBIC YARDS OF ORGANIC-CONTAMINATED SOILS WITHIN PARCEL 1 AND OFF-SITE DISPOSAL AT AN APPROVED LANDFILL.
- EXCAVATION AND OFF-SITE DISPOSAL AT AN APPROVED LANDFILL OF APPROXIMATELY 4,000 CUBIC YARDS OF CONTAMINATED SOILS WITHIN PARCELS 2, 3 AND 4.
- PREPARATION OF A SUPPLEMENTAL REMEDIAL INVESTIGATION AND FEASIBILITY STUDY TO IDENTIFY THE EXTENT OF GROUNDWATER CONTAMINATION AND DEVELOP AND EVALUATE APPROPRIATE REMEDIAL ALTERNATIVES.
- PROVISION OF AN ALTERNATE WATER SUPPLY FOR AFFECTED BOROUGH OF FRANKLIN RESIDENTS BY CONSTRUCTING A PIPELINE CONNECTION TO THE BOROUGH OF HAMBURG PUBLIC WATER SUPPLY SYSTEM.

Item 6

REGION :2
SITE NAME :CALDWELL TRUCKING
LOCATION :FAIRFIELD, NJ
NTIS REPORT #:EPA/ROD/R02-86/029
ROD DATE :860925
ABSTRACT :

THE CALDWELL TRUCKING COMPANY SITE IS A 12.2-ACRE PROPERTY IN

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FAIRFIELD TOWNSHIP, ESSEX COUNTY, NJ WHICH IS BORDERED BY LIGHT INDUSTRY TO THE NORTH, WEST, AND SOUTHWEST AND IS DIRECTLY ACROSS FROM THE ESSEX COUNTY AIRPORT PROPERTY. APPROXIMATELY 45 SMALL BUSINESSES ARE SITUATED WITHIN ONE MILE OF THE SITE. THE NEAREST MAJOR RESIDENTIAL AREA IS ABOUT 1,000 FEET NORTHEAST OF THE SITE. THE PASSAIC RIVER IS LOCATED ABOUT 4,000 FEET NORTHEAST AND IS USED AS A PUBLIC WATER SUPPLY. NUMEROUS RESIDENTIAL WELLS NORTH OF THE SITE ARE NO LONGER IN USE AND MOST OF THE RESIDENTS NOW USE MUNICIPAL WATER. THE CALDWELL TRUCKING COMPANY WAS INCORPORATED BY THE STATE OF NJ IN 1946 FOR THE PURPOSE OF CLEANING RESIDENTIAL SEPTIC TANKS. FOR A NUMBER OF YEARS, CALDWELL EMPTIED SEPTIC SYSTEMS AND TRANSPORTED THE WASTE TO AN OLD SLAUGHTER HOUSE PROPERTY (NOW PART OF THE CALDWELL SITE) FOR DISPOSAL IN ONE OF THE OPEN, UNLINED LAGOONS PRESENT ON SITE. BASED ON INFORMATION SUPPLIED BY CALDWELL IN 1973, WASTES WOULD BE TREATED WITH A DISINFECTANT SUCH AS SODIUM HYPOCHLORITE AND ALLOWED TO SETTLE. LATER, THE "CLARIFIED" LIQUID LAYER WOULD BE PUMPED OUT AND TRANSPORTED BY TANK TRUCK TO A LARGE SEEPAGE LAGOON WHERE THE LIQUID WOULD PERCOLATE QUICKLY THROUGH THE SANDY SOIL. IN THE MID-1950S LIGHT INDUSTRY, DEVELOPING IN THE AREA, MAY HAVE DISCHARGED HAZARDOUS SUBSTANCES INTO THEIR SEPTIC SYSTEMS TO BE SUBSEQUENTLY PUMPED OUT AND DEPOSITED ON THE CALDWELL PROPERTY. THERE WERE ALSO OTHER TRUCKING COMPANIES WHO BROUGHT SEPTIC SUBSTANCES TO THE SITE, WHICH MAY HAVE BEEN MIXED WITH HAZARDOUS WASTES. THERE ARE ALSO INDICATIONS THAT SPENT SOLVENTS AND OTHER INDUSTRIAL LIQUID WASTES WERE DISPOSED OF IN ONSITE LAGOONS. IN 1972 SEEPAGE AND ODORS FROM THE SITE REVEALED THAT CALDWELL WAS DISPOSING OF SEPTIC WASTE IN THIS MANNER WITHOUT THE NECESSARY PERMITS. THEY WERE LICENSED TO TRANSPORT WASTE BUT WERE NOT AN APPROVED DISPOSAL FACILITY. A 1973 APPLICATION TO OPERATE AS A SANITARY LANDFILL WAS DENIED BY THE NJDEP. SUBSEQUENTLY, CALDWELL BACKFILLED ALL LAGOONS EXCEPT ONE, WHICH WAS COVERED WITH PLYWOOD. AT THE START OF THE RI IN 1982, THE CALDWELL PROPERTY SHOWED ALMOST NO VISIBLE SIGNS OF A SEPTIC WASTE DISPOSAL FACILITY. THE SOURCE OF CONTAMINATION, WHICH HAD BEEN DEPOSITED IN UNLINED LAGOONS, HAD BEEN BACKFILLED 12 YEARS EARLIER. THE PRIMARY CONTAMINANTS OF CONCERN INCLUDE: VOCS, TCE, PCBS, PAHS, INORGANICS, AND LEAD.

THE SELECTED REMEDIAL ACTION INCLUDES: EXCAVATION AND TREATMENT, VIA HEAT ADDITION, OF APPROXIMATELY 28,000 CUBIC YARDS OF CONTAMINATED SOILS AND WASTE MATERIALS; DISPOSAL OF UNTREATED SOILS IN A SECURE LANDFILL TO BE CONSTRUCTED AT THE SITE IN ACCORDANCE WITH RCRA REQUIREMENTS; RESTORATION OF A LAST POTABLE WATER RESOURCE BY PROVIDING TREATMENT, VIA AIR STRIPPING, OF MUNICIPAL PUBLIC WATER SUPPLY WELL NUMBER 7; PROVISION OF AN ALTERNATE WATER SUPPLY FOR RESIDENTS POTENTIALLY AFFECTED BY GROUND WATER CONTAMINATION FROM THE SITE; PREPARATION OF A SUPPLEMENTAL RI/FS TO IDENTIFY THE EXTENT AND OTHER SOURCES OF GROUND WATER CONTAMINATION AND TO DEVELOP AND EVALUATE APPROPRIATE REMEDIAL ALTERNATIVES. ESTIMATED CAPITAL COSTS FOR THIS REMEDIAL ACTION ARE $5,490,000 WITH ANNUAL O&M COSTS OF $48,000.

REMEDY :

- EXCAVATION AND TREATMENT, VIA HEAT ADDITION, OF APPROXIMATELY 28,000 CUBIC YARDS OF CONTAMINATED SOILS AND WASTE MATERIALS.

ABSTRACTS FOR SANITARY LANDFILLS
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- DISPOSAL OF TREATED SOILS IN A SECURE LANDFILL TO BE CONSTRUCTED AT THE SITE IN ACCORDANCE WITH RESOURCE CONSERVATION AND RECOVERY ACT REQUIREMENTS.
- RESTORATION OF A LOST POTABLE WATER RESOURCE BY PROVIDING TREATMENT, VIA AIR STRIPPING, OF MUNICIPAL PUBLIC WATER SUPPLY WELL NUMBER 7.
- PROVISION OF AN ALTERNATE WATER SUPPLY FOR RESIDENTS POTENTIALLY AFFECTED BY GROUND WATER CONTAMINATION FROM THE SITE.
- PREPARATION OF A SUPPLEMENTAL REMEDIAL INVESTIGATION AND FEASIBILITY STUDY TO IDENTIFY THE EXTENT AND OTHER SOURCES OF GROUND WATER CONTAMINATION AND TO DEVELOP AND EVALUATE APPROPRIATE REMEDIAL ALTERNATIVES.

Item 7

REGION :2
SITE NAME :FLORENCE LANDFILL
LOCATION :FLORENCE TWP, NJ
NTIS REPORT #:EPA/ROD/R02-86/024
ROD DATE :860627
ABSTRACT :

THE FLORENCE LAND RECONTOURING (FLR) LANDFILL IS A 60-ACRE SITE LOCATED ON CEDAR LANE EXTENSION IN THE TOWNSHIPS OF FLORENCE, MANSFIELD, AND SPRINGFIELD IN BURLINGTON COUNTY, NEW JERSEY. THE SITE CONSISTS OF A 29-ACRE LANDFILL, TWO LAGOONS, A POND AND TWO TANKS, AND IS LOCATED IN A COMBINED RESIDENTIAL-AGRICULTURAL AREA. THE SITE IS BOUNDED BY LAND PURCHASED BY BURLINGTON COUNTY FOR A NEW 600-ACRE SOLID WASTE MANAGEMENT FACILITY AND BY ASSISCUNK CREEK, A TRIBUTARY TO THE DELAWARE RIVER WHICH IS USED FOR RECREATION AND IRRIGATION. THE FLR LANDFILL WAS OPERATED AS A SOLID WASTE DISPOSAL FACILITY FROM LATE 1973 TO LATE 1981 AND WAS PERMITTED TO ACCEPT SANITARY AND NON-CHEMICAL INDUSTRIAL WASTES. IN 1975, THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION INVESTIGATED CHEMICAL WASTE DISPOSAL AT THE SITE AND DISCLOSED THAT 95 TONS OF HAZARDOUS WASTE CONSISTING OF PHTHALATES, HEAVY METALS AND VINYL CHLORIDE MONOMERS HAD BEEN ILLEGALLY DISPOSED AT THE SITE. ELEVATED LEVELS OF HAZARDOUS SUBSTANCE HAVE BEEN DISCOVERED IN SOILS AND GROUNDWATER WITHIN THE LANDFILL.

THE SELECTED REMEDIAL ALTERNATIVE INCLUDES: CONSTRUCTION OF A SYNTHETIC MEMBRANE AND CLAY COMPOSITE CAP, A CIRCUMFERENTIAL SOIL/BENTONITE SLURRY CONTAINMENT WALL, AN UPGRADIENT GROUND WATER INTERCEPTOR SYSTEM AND A NEW STORMWATER MANAGEMENT SYSTEM; LEACHATE TREATMENT AND DISPOSAL AT A POTW OR THE BURLINGTON COUNTY SOLID WASTE COMPLEX, GAS COLLECTION AND TREATMENT; REMOVAL AND DISPOSAL OF LAGOON LIQUIDS AND SEDIMENTS, AND OTHER SURFACE DEBRIS; CONSTRUCTION OF A PARTIAL FENCE WITH WARNING SIGNS; AND SUPPLEMENTAL SAMPLING OF GROUND WATER, SURFACE WATER AND SEDIMENTS DURING DESIGN. THE ESTIMATED CAPITAL COST FOR THE SELECTED REMEDY IS $8,021,000 WITH ANNUAL O&M COSTS OF $170,000.

REMEDY :
- CONSTRUCTION OF A SYNTHETIC MEMBRANE AND CLAY COMPOSITE CAP;
- CONSTRUCTION OF A CIRCUMFERENTIAL SOIL/BENTONITE SLURRY CONTAINMENT

WALL;
- CONSTRUCTION OF AN UPGRADIENT GROUND-WATER INTERCEPTOR SYSTEM;
- CONSTRUCTION OF A NEW STORMWATER MANAGEMENT SYSTEM;
- LEACHATE TREATMENT AND DISPOSAL AT A POTW OR THE BURLINGTON COUNTY SOLID WASTE MANAGEMENT FACILITIES COMPLEX;
- GAS COLLECTION AND TREATMENT;
- REMOVAL AND DISPOSAL OF LAGOON LIQUIDS AND SEDIMENTS, AND OTHER SURFACE DEBRIS;
- CONSTRUCTION OF A PARTIAL FENCE WITH WARNING SIGNS;
- SUPPLEMENTAL SAMPLING OF GROUND WATER, SURFACE WATER AND SEDIMENTS DURING DESIGN.

Item 8

REGION :2
SITE NAME :COMBE FILL NORTH
LOCATION :MOUNT OLIVE TWP, NJ
NTIS REPORT #:EPA/ROD/R02-86/028
ROD DATE :860929
ABSTRACT :

THE COMBE FILL NORTH SITE IS LOCATED IN MOUNT OLIVE TOWNSHIP, NJ, NEAR THE INTERSECTION OF U.S. HIGHWAY 206 AND INTERSTATE 80. THE FORMER LANDFILL COMPRISES 65 ACRES OF THE 103-ACRE PROPERTY. THE AREA SURROUNDING THE SITE IS PRIMARILY WOODED, WITH SMALL RESIDENTIAL AREAS, FARMS AND LIGHT INDUSTRY NEARBY. APPROXIMATELY 10,000 PEOPLE RELY ON GROUND WATER SUPPLIED FROM WELLS DOWNGRADIENT OF THE SITE. BETWEEN 1966 AND 1978, THE SITE OPERATED AS A SANITARY MUNICIPAL LANDFILL, ACCEPTING MUNICIPAL, VEGETATIVE, AND NON-CHEMICAL INDUSTRIAL WASTES, ALONG WITH SMALL AMOUNTS OF DRY SEWAGE SLUDGE. FROM SEPTEMBER 1978 UNTIL JANUARY 1981, THE LANDFILL WAS OWNED AND OPERATED BY THE COMBE FILL CORPORATION (CFC). DURING THIS TIME, CFC WAS REPEATEDLY CITED FOR VIOLATION OF NEW JERSEY SOLID WASTE ADMINISTRATION CODES. IN 1979, PUBLIC OUTRAGE AT THE DISPOSAL PRACTICES OF CFC LED TO FORMATION OF SMOTHER (SAVE MOUNT OLIVE TOWNSHIP-HALT ENVIRONMENTAL RAPE), A PUBLIC ACTION GROUP WHICH CONDUCTED GROUND WATER SAMPLING AND INITIATED PROCEDURES TO INCLUDE THE COMBE FILL NORTH SITE ON THE NPL. DURING THE RI, GROUND WATER, SOILS, LEACHATE, SEDIMENTS AND SURFACE WATER WERE SAMPLED. LOW LEVELS OF VOLATILE ORGANICS WERE FOUND IN SOILS AND LEACHATE, AND HEXACHLOROBENZENE, PHENOL AND BIS (2-ETHYLHEXYL) PHTHALATE WERE DETECTED IN LOW CONCENTRATIONS IN GROUND WATER SAMPLES.

THE SELECTED REMEDIAL ACTION FOR THE COMBE FILL NORTH SITE INCLUDES; GRADING AND COMPACTING THE 65-ACRE WASTE DISPOSAL AREA; CAPPING THE LANDFILL IN ACCORDANCE WITH APPROPRIATE SOLID WASTE MANAGEMENT CRITERIA; INSTALLATION OF DRAINAGE SYSTEM, INCLUDING PERIMETER DITCHES AND CORRUGATED METAL PIPES; INSTALLATION OF A METHANE VENTILATION SYSTEM; FENCING THE ENTIRE SITE; AND IMPLEMENTATION OF AN APPROPRIATE MONITORING PROGRAM TO ENSURE THE EFFECTIVENESS OF THE REMEDIAL ACTION. ESTIMATED CAPITAL COST FOR THE REMEDY IS $10,500,000 WITH ANNUAL O&M COSTS OF $168,000.

REMEDY :

- GRADE AND COMPACT THE 65-ACRE WASTE DISPOSAL AREA
- CAP THE LANDFILL IN ACCORDANCE WITH APPROPRIATE SOLID WASTE MANAGEMENT CRITERIA
- INSTALL A DRAINAGE SYSTEM, INCLUDING PERIMETER DITCHES AND CORRUGATED METAL PIPES
- INSTALL A METHANE VENTING SYSTEM
- CONSTRUCT A SECURITY FENCE SURROUNDING THE SITE
- IMPLEMENT AN APPROPRIATE MONITORING PROGRAM TO ENSURE THE EFFECTIVENESS OF THE REMEDIAL ACTION.

Item 9

REGION :2
SITE NAME :LOVE CANAL
LOCATION :NIAGARA FALLS, NY
NTIS REPORT #:EPA/ROD/R02-85/014
ROD DATE :850506
ABSTRACT :

THE LOVE CANAL SITE IS LOCATED IN THE SOUTHEAST CORNER OF THE CITY OF NIAGARA FALLS AND IS APPROXIMATELY ONE-QUARTER MILE NORTH OF THE NIAGARA RIVER. BETWEEN 1942 AND 1952, HOOKER CHEMICAL AND PLASTICS CORPORATION (NOW OCCIDENTAL CHEMICAL CORPORATION) DISPOSED OF OVER 21,000 TONS OF VARIOUS CHEMICALS INTO LOVE CANAL. THE SOLID AND LIQUID WASTES DEPOSITED INTO THE CANAL INCLUDE ACIDS, CHLORIDES, MERCAPTANS, PHENOLS, TOLUENES, PESTICIDES, CHLOROPHENOLS, CHLOROBENZENES, AND SULFIDES.

THE SELECTED REMEDIAL ACTION INCLUDES; HYDRAULICALLY CLEAN DESIGNATED SEWERS, REMOVE AND DISPOSE OF CONTAMINATED SEDIMENTS AND INSPECT SPECIFIC SEWER REACHES FOR DEFECTS THAT COULD ACT AS PATHWAYS FOR CONTAMINANT MIGRATION; REPAIR DAMAGED FLOOD GATE AT THE SOUTH STORM AND SANITARY SEWER; LIMIT ACCESS, DREDGE DESIGNATED PORTIONS OF THE CREEKS AND HYDRAULICALLY CLEAN BLACK CREEK CULVERTS; PERFORM TEMPORARY IN-SITU STABILIZATION OF THE CONTAMINATED SEDIMENT VIA THE ERECTION OF A BERM UNTIL ISSUES CONCERNING THE SOURCE OF CONTAMINATION FROM 102ND STREET LANDFILL ARE RESOLVED. ALL WASTE WILL BE STORED WITHIN THE LOVE CANAL CONTAINMENT SYSTEM. IN ADDITION TO THE ABOVE REMEDIAL ACTION, THE INSTALLATION OF A PERMANENT ADMINISTRATION BUILDING IS BEING RECOMMENDED ON-SITE. TOTAL CAPITAL COST FOR THE SELECTED REMEDIAL ALTERNATIVE IS ESTIMATED TO BE $8,929,000.

REMEDY :

FIVE AREAS HAVE BEEN DEFINED FOR REMEDIATION UNDER THIS RECOMMENDED ACTION. SPECIFICALLY;

1. NORTH STORM AND SANITARY SEWERS - HYDRAULICALLY CLEAN DESIGNATED SEWERS, REMOVE AND DISPOSE OF CONTAMINATED SEDIMENTS AND INSPECT SPECIFIC SEWER REACHES FOR DEFECTS THAT COULD ACT AS PATHWAYS FOR CONTAMINANT MIGRATION. WASTE WILL BE STORED WITHIN THE LOVE CANAL CONTAINMENT SYSTEM.
2. BLACK AND BERGHOLTZ CREEKS - LIMIT ACCESS, DREDGE DESIGNATED PORTIONS OF THE CREEKS, AND HYDRAULICALLY CLEAN BLACK CREEK CULVERTS. WASTE WILL BE STORED WITHIN THE LOVE CANAL CONTAINMENT

SYSTEM.
3. SOUTH STORM AND SANITARY SEWER - HYDRAULICALLY CLEAN DESIGNATED SEWERS, REMOVE AND DISPOSE OF CONTAMINATED SEDIMENTS AND INSPECT SPECIFIC SEWER REACHES FOR DEFECTS, AND REPAIR DAMAGED FLOOD GATE. WASTE WILL BE STORED WITHIN THE LOVE CANAL CONTAINMENT SYSTEM.
4. 102ND STREET OUTFALL - (IF FOUND CONSISTENT WITH THE 102ND STREET) SUPERFUND SITE PROJECT PLAN PERFORM TEMPORARY IN-SITU STABILIZATION OF THE CONTAMINATED SEDIMENT VIA THE ERECTION OF A BERM UNTIL ISSUES CONCERNING THE SOURCE OF CONTAMINATION FROM 102ND STREET LANDFILL ARE RESOLVED.
5. WEST STORM AND SANITARY SEWERS - HYDRAULICALLY CLEAN DESIGNATED SEWERS, REMOVE AND DISPOSE OF CONTAMINATED SEDIMENTS, INSPECT SPECIFIC SEWER REACHES FOR DEFECTS, AND INVESTIGATE FURTHER DOWNSTREAM AREAS. WASTE WILL BE STORED WITHIN THE LOVE CANAL CONTAINMENT SYSTEM.

IN ADDITION, THE INSTALLATION OF A PERMANENT ADMINISTRATION BUILDING IS BEING RECOMMENDED ON-SITE.

Item 10

REGION :3
SITE NAME :TYBOUTS CORNER
LOCATION :WILMINGTON, DE
NTIS REPORT #:EPA/ROD/R03-86/019
ROD DATE :860306
ABSTRACT :

THE TYBOUTS CORNER LANDFILL SITE IS LOCATED IN NORTHERN DELAWARE, APPROXIMATELY TEN MILES SOUTH OF WILMINGTON, IN NEW CASTLE COUNTY. THE LANDFILL CONSISTS OF TWO FILL AREAS. THE MAIN FILL IS ABOUT 47 ACRES IN SIZE AND IS LOCATED NEAR THE CONFLUENCE OF PIGEON RUN AND RED LION CREEK. A SMALLER FILL AREA, ESTIMATED TO BE ABOUT FOUR ACRES, IS LOCATED JUST WEST OF PIGEON RUN. THE SITE WAS ORIGINALLY A SAND AND GRAVEL PIT. WHEN THE LANDFILL BEGAN TO OPERATE, PLANS INDICATE THAT NO CLAY LINER OR OTHER IMPERVIOUS MATERIAL WAS PLACED BELOW THE FILL AND NO IMPERVIOUS CAP WAS PLACED ON THE TOP OF THE FILL FOLLOWING ABANDONMENT. TYBOUTS CORNER LANDFILL WAS USED BY THE NEW CASTLE COUNTY DEPARTMENT OF PUBLIC WORKS AS A MUNICIPAL SANITARY LANDFILL FOR THE DISPOSAL OF MUNICIPAL AND DOMESTIC REFUSE FROM DECEMBER 1968 UNTIL JULY 1971. IN ADDITION, INDUSTRIAL WASTES WERE DISPOSED THERE DURING THE ACTIVE LIFE OF THE LANDFILL. THESE INDUSTRIAL WASTES INCLUDED: TRICHLOROETHYLENE, VINYL CHLORIDE, 1,2-DICHLOROETHANE, BENZENE AND VARIOUS OTHER ORGANIC AND INORGANIC CHEMICALS.

THE MAIN THREAT POSED BY TYBOUTS CORNER LANDFILL IS THAT THE HAZARDOUS SUBSTANCES DISPOSED OF IN THE LANDFILL ARE CONTAMINATING THE LOCAL AND REGIONAL AQUIFERS WHICH ARE A MAIN SOURCE OF WATER FOR THE REGION. THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES: EXCAVATION OF ALL MUNICIPAL AND INDUSTRIAL WASTES, AS WELL AS CONTAMINATED SUBSOILS IN THE WEST FILL AND CONSOLIDATION WITH THE MAIN FILL; CAPPING OF THE CONSOLIDATED MAIN FILL AREA WITH A MULTI-LAYERED RCRA CAP; INSTALLATION OF A SUBSURFACE DRAIN OR TRENCH SYSTEM; IMPLEMENTATION OF A HEALTH AND

SAFETY PLAN; AND ESTABLISHING A MONITORING PROGRAM. IN ADDITION, THE OFFSITE PLUME OF CONTAMINATED GROUND WATER IN THE UPPER HYDROLOGIC ZONE (UHZ) OF THE POTOMAC WILL BE PUMPED AND TREATED OR OTHERWISE DISPOSED OF, EITHER ONSITE OR OFFSITE AT A LOCAL SEWAGE TREATMENT PLANT. THE GOAL OF THE OFFSITE GROUND WATER TREATMENT WILL BE TO REDUCE THE LEVEL OF CONTAMINANTS TO 100 PPB OF TOTAL VOLATILE ORGANICS, AND 10-4 CANCER RISK LEVEL FOR CANCER-CAUSING CONTAMINANTS. DURING THE PUMPING, INSTITUTIONAL CONTROLS WILL BE UTILIZED TO PREVENT USE OF CONTAMINATED GROUND WATER. THE ROD DOES NOT PROVIDE ESTIMATED CAPITAL COST AND ANNUAL O&M COSTS FOR THE SELECTED REMEDIAL ACTION.

REMEDY :

1) THE WEST FILL WILL BE EXCAVATED AND CONSOLIDATED WITH THE MAIN FILL. EXCAVATION WILL INCLUDE ALL MUNICIPAL AND INDUSTRIAL WASTES AS WELL AS CONTAMINATED SUBSOILS. THE AMOUNT OF CONTAMINATED SUBSOIL TO BE REMOVED WILL BE BASED ON A SITE-SPECIFIC CHEMICAL FATE AND TRANSPORT ANALYSIS. THIS ANALYSIS WILL BE CONDUCTED TO ENSURE THAT NO SOIL REMAINS IN PLACE WHICH COULD CAUSE GROUND WATER CONTAMINATION TO EXCEED THE STANDARDS ESTABLISHED IN THIS RECORD OF DECISION. THE EXCAVATED AREA WILL BE BACKFILLED WITH SUITABLE CLEAN FILL MATERIAL.
2) A MULTI-LAYERED CAP THAT COMPLIES WITH RCRA WILL BE PLACED OVER THE CONSOLIDATED MAIN FILL AREA TO SIGNIFICANTLY REDUCE OR ELIMINATE THE VERTICAL INFILTRATION OF PRECIPITATION.
3) A SUBSURFACE DRAIN OR TRENCH SYSTEM WILL BE INSTALLED TO PROHIBIT CONTINUED LATERAL MIGRATION OF GROUND WATER THROUGH THE FILL AND TO COLLECT EXISTING LEACHATE FROM THE FILL. THE MULTI-LAYERED CAP AND THE SUBSURFACE DRAIN/TRENCH SYSTEM TOGETHER ARE INTENDED TO DEWATER THE CONSOLIDATED FILL. THIS GROUND WATER DIVERSION SYSTEM AND MULTI-LAYERED CAP WILL BE MAINTAINED UNTIL THEY ARE NO LONGER NEEDED.
4) THE OFFSITE PLUME OF CONTAMINATED GROUND WATER IN THE UPPER HYDROLOGIC ZONE (UHZ) OF THE POTOMAC WILL BE PUMPED AND TREATED OR OTHERWISE DISPOSED OF, EITHER ONSITE OR OFFSITE. DURING THE PUMPING, INSTITUTIONAL CONTROLS WILL BE UTILIZED TO PREVENT USE OF CONTAMINATED GROUND WATER.
THE GOAL OF THE OFFSITE GROUND WATER TREATMENT WILL BE TO REDUCE THE LEVEL OF CONTAMINANTS TO 100 PPB OF TOTAL VOLATILE ORGANICS WITH SEPARATE STANDARDS FOR CANCER-CAUSING CONTAMINANTS. THE LEVELS FOR THESE SPECIFIC SUBSTANCES ARE LISTED IN THE BODY OF THE RECOMMENDED ALTERNATIVE AND ARE SELECTED TO MEET A 10-4 CANCER RISK LEVEL AT THE BOUNDARY OF THE LANDFILL PROPERTY. A 10-4 LEVEL WAS SELECTED BECAUSE IT IS NOT TECHNICALLY FEASIBLE TO ATTAIN THE 10-6 RISK LEVEL. EPA WILL EVALUATE GROUND WATER CONTAMINATION LEVELS AFTER THREE, SIX AND TEN YEARS OF PUMPING AND TREATING. IF THE STANDARDS ARE MET AT ANY OF THE EVALUATION POINTS, PUMPING WILL BE DISCONTINUED. IF, AFTER A TEN-YEAR PUMPING PERIOD, STANDARDS HAVE STILL NOT BEEN MET, EPA WILL EVALUATE THE TECHNICAL FEASIBILITY OF MEETING THE STANDARDS AND SET NEW ONES IF NECESSARY. PUMPING MAY BE TERMINATED IF IT IS SHOWN THAT NO REASONABLE MODIFICATION OF THE PUMPING SYSTEM WOULD PRODUCE SIGNIFICANT IMPROVEMENT.
EPA WILL THEN EXAMINE THE NEED FOR ADDITIONAL MONITORING LOCATIONS TO ASSURE THAT THE INFLUENCE OF ANY OFFSITE PRODUCTION WELL

WILL NOT CAUSE THE REMAINING CONTAMINATED GROUND WATER FROM TYBOUTS CORNER LANDFILL TO MIGRATE AWAY FROM THE SITE.

5) CONTAMINATED WATER GENERATED BY EXCAVATION, CONSTRUCTION, SUBSURFACE DRAINAGE SYSTEM COLLECTION AND GROUND WATER PUMPING WILL EITHER BE SENT TO A LOCAL SEWAGE TREATMENT PLANT OFFSITE, OR TREATED ONSITE. IT IS POSSIBLE THAT A COMBINATION OF THESE TWO TREATMENT SYSTEMS AND LOCATIONS WILL BE USED. ALL TREATED WATER WILL MEET NPDES STANDARDS BEFORE DISPOSAL TO SURFACE WATERS, INCLUDING ANY PRETREATMENT REQUIREMENTS IF THE SEWAGE TREATMENT IS UTILIZED. ALL WATERS WILL BE DISPOSED OF IN COMPLIANCE WITH LOCAL, STATE AND FEDERAL LAW.

6) A HEALTH AND SAFETY PLAN WILL BE IMPLEMENTED FOR ALL ACTIVITIES DESCRIBED IN THIS RECORD OF DECISION. DURING EXCAVATION AND CONSTRUCTION ACTIVITIES, AIR MONITORING WILL BE CONDUCTED TO ENSURE THE SAFETY OF THE ONSITE WORKERS AS WELL AS TO PROTECT THE RESIDENTS LIVING NEARBY THE EXCAVATED AREAS.

7) A MONITORING PROGRAM WILL BE ESTABLISHED TO ENSURE THAT GROUND WATER QUALITY, SURFACE WATER QUALITY, THE MULTI-LAYER CAP AND AIR QUALITY ARE MAINTAINED.

Item 11

REGION :3
SITE NAME :HELEVA LANDFILL
LOCATION :COPLAY (IRONTON VILLAGE), PA
NTIS REPORT #:EPA/ROD/R03-85/011
ROD DATE :850322
ABSTRACT :

THE HELEVA LANDFILL SITE CONSISTS OF A 20-ACRE LANDFILL LOCATED ON A 93-ACRE TRACT OF LAND IN LEHIGH COUNTY, PENNSYLVANIA. THE SITE IS SURROUNDED PRIMARILY BY FARM AND PASTURELANDS, WITH THE VILLAGE OF ORMROD (POPULATION APPROXIMATELY 100) AND TOWN OF IRONTON (POPULATION 150) LOCATED APPROXIMATELY ONE QUARTER MILE AWAY. THE SITE BEGAN OPERATIONS AS A SANITARY LANDFILL IN 1967, ACCEPTING 250-350 TONS/DAY OF MIXED REFUSE INCLUDING PAPER, WOOD, AND ORCHARD WASTES. IN ADDITION, INDUSTRIAL WASTES WITH HIGH LEVELS OF TRICHLOROETHYLENE (200 UG/L) WERE SENT TO THE SITE AS EARLY AS 1967. THE SITE WAS CLOSED IN MAY OF 1981 BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES BECAUSE OF OPERATIONAL DEFICIENCIES.

THE SELECTED REMEDY FOR THE HELEVA LANDFILL SITE CONSISTS OF EXTENDING AN EXISTING WATER MAIN FROM ORMROD TO IRONTON, CAPPING THE ENTIRE 20-ACRE LANDFILL ACCORDING TO RCRA STANDARDS, CONSTRUCTING SURFACE WATER DIVERSION AND GAS VENTING SYSTEMS, CONDUCTING A PRE-DESIGN STUDY TO FULLY DELINEATE THE SOURCE OF CONTAMINATION AND DETERMINE SINK HOLE ACTIVITY, CONSTRUCTING A TREATMENT FACILITY ONSITE, PUMPING AND TREATING HIGHLY CONTAMINATED GROUND WATER, MONITORING AND SAMPLING EXISTING WELLS AND SURFACE WATER, AND CONDUCTING OPERATIONS AND MAINTENANCE FOR A PERIOD OF AT LEAST TWO YEARS. THE TOTAL CAPITAL COST OF THE SELECTED REMEDIAL ALTERNATIVE IS ESTIMATED TO BE $7,253,000. ANNUAL O&M COSTS ARE ESTIMATED TO BE $62,000.

REMEDY :

- PROVIDE AND INSTALL AN ALTERNATE WATER SUPPLY BY EXTENDING AN EXISTING 12" WATER MAIN APPROXIMATELY 1 MILE FROM ORMROD TO IRONTON.
- INSTALL A CAP ON THE 20 ACRE LANDFILL THAT MEETS ALL THE REQUIREMENTS OF THE RESOURCES CONSERVATION AND RECOVERY ACT (RCRA).
- CONSTRUCTION OF A SURFACE WATER DIVERSION SYSTEM.
- CONSTRUCTION OF A GAS VENTING SYSTEM WITH MONITORING AND POSSIBLE TREATMENT.
- A PRE-DESIGN STUDY WHICH WILL INVOLVE TEST BORINGS TO MORE FULLY DELINEATE THE LOCATION AND MAGNITUDE OF THE SOURCE OF CONTAMINATION AND TO DETERMINE IF COLLECTION OF THIS SOURCE WILL BE EFFECTIVE IN REDUCING THE CONTAMINATION OVER THE EXTENT OF THE CONTAMINATED AREA. THE PRE-DESIGN STUDY WILL ALSO DETERMINE THE EXISTENCE AND MAGNITUDE OF SINKHOLE ACTIVITY IN THE AREA.
- BASED ON THE FINDINGS OF THE PRE-DESIGN STUDY, A SOURCE REDUCTION PROGRAM INVOLVING PUMPING AND TREATING OF HIGHLY CONTAMINATED GROUND WATER FROM THE LANDFILL WILL BE IMPLEMENTED.
- A TREATMENT FACILITY WILL BE CONSTRUCTED ONSITE AND WILL TREAT THE WASTEWATER DOWN TO APPROVED CONCENTRATION LEVELS BEFORE DISCHARGE INTO COPLAY CREEK.
- A MONITORING PROGRAM DURING AND SUBSEQUENT TO THE REMEDIAL ACTION. THIS INCLUDES MONITORING IN COMPLIANCE WITH RCRA REGULATIONS, MONITORING OF EXISTING MONITORING WELLS AND PERIODIC SAMPLING AND ANALYSIS OF POTENTIALLY AFFECTED SURFACE WATER IN THE AREA.
- OPERATION AND MAINTENANCE WILL BE IMPLEMENTED BY THE STATE OF PENNSYLVANIA ON THE LANDFILL CAP, GAS VENTING SYSTEM, SURFACE WATER DIVERSION SYSTEM AND MONITORING PROGRAM SIX MONTHS AFTER CONSTRUCTION OF THESE SYSTEMS. THE SOURCE REDUCTION AND TREATMENT SYSTEM WILL BE OPERATED AS A REMEDIAL ACTION FOR A PERIOD OF AT LEAST TWO YEARS AND WILL BE ELIGIBLE FOR TRUST FUND MONIES.

Item 12

REGION :4
SITE NAME :NEWPORT DUMP
LOCATION :WILDERS, KY
NTIS REPORT #:EPA/ROD/R04-87/021
ROD DATE :870327
ABSTRACT :

THE NEWPORT DUMP SITE IS LOCATED ON THE LICKING RIVER, A TRIBUTARY OF THE OHIO RIVER, IN THE CITY OF WILDERS, KENTUCKY. THE SITE WAS ORIGINALLY PURCHASED BY THE CITY OF NEWPORT IN THE LATE 1940'S AND WAS USED BY THE CITY FOR THE DISPOSAL OF RESIDENTIAL AND COMMERCIAL WASTES FROM ITS OPENING UNTIL ITS CLOSURE IN 1979. TRENCHING AND AREA FILLING OF THE WASTE WERE THE MOST COMMON METHODS USED TO DISPOSE OF WASTE AT THE SITE. IN 1968, THE COMMONWEALTH OF KENTUCKY INSTITUTED PERMITTING REQUIREMENTS FOR LANDFILLS. THE CITY OF NEWPORT RECEIVED A PERMIT IN LATE 1969 TO OPERATE THE SITE AS A MUNICIPAL SANITARY LANDFILL. THE SITE WAS CLOSED IN 1979 AND OWNERSHIP WAS TRANSFERRED TO THE NORTHERN KENTUCKY PORT AUTHORITY (NKPA) THE SAME YEAR. DURING THE LIFE OF THE LANDFILL, THE CITY WAS CITED ON NUMEROUS OCCASIONS FOR OPERATIONAL

VIOLATIONS AND FOR HANDLING HAZARDOUS WASTE WITHOUT A PERMIT. THE CONTAMINATED MEDIA INCLUDES; GROUND WATER, AND SOIL. THE PRIMARY CONTAMINANTS OF CONCERN INCLUDE: METAL, PAHS, SOLVENTS, AND PCBS.
THE SELECTED REMEDIAL ACTION INCLUDES: IMPLEMENTATION OF A MULTI-MEDIA MONITORING PROGRAM; RESTORATION AND EXTENSION OF LEACHATE COLLECTION SYSTEM; RESTORATION, REGRADING, AND REVEGETATION OF EXISTING CLAY CAP. FURTHER ACTIONS WILL DEPEND ON THE MONITORING ANALYSIS RESULTS. THE ESTIMATED CAPITAL COST FOR THIS REMEDY IS $516,000 WITH ESTIMATED ANNUAL O&M COSTS FOR THE FIRST 3 YEARS OF $63,000 AND FOR YEARS 4 THROUGH 30 OF $35,000.
REMEDY :
- MULTIMEDIA MONITORING PROGRAM
- RESTORATION AND EXTENSION OF LEACHATE COLLECTION SYSTEM
- RESTORATION, REGRADING AND REVEGETATION OF EXISTING CLAY CAP

Item 13

REGION :4
SITE NAME :SAPP BATTERY
LOCATION :ALFORD, FL
NTIS REPORT #:EPA/ROD/R04-86/018
ROD DATE :860926
ABSTRACT :
THE SAPP BATTERY SITE OCCUPIES AN AREA OF APPROXIMATELY 45 ACRES IN A RURAL PART OF JACKSON COUNTY, FLORIDA. LOCATED ON THE SITE ARE TWO PONDS, CONNECTED BY A SMALL CHANNEL. IN 1970, SAPP BATTERY SERVICE, INC. BEGAN AN OPERATION TO RECOVER LEAD FROM USED BATTERIES. THE PROCESS CONSISTED OF BREAKING OPEN USED BATTERIES, DUMPING THE ACID OUTSIDE THE PLANT, RECOVERING THE LEAD, AND DISPOSING OF THE BROKEN BATTERY CASINGS IN AN ONSITE MAN-MADE FISHING POND. IN 1977 THE ACID DISCHARGE BEGAN KILLING NEARBY CYPRESS TREES. SAPP BATTERY SUBSEQUENTLY UNDERTOOK SEVERAL STEPS TO ALLEVIATE THE PROBLEM, ALL OF WHICH FAILED. IN 1980, MR. JERRY SAPP, OWNER OF SAPP BATTERY, CLOSED OPERATIONS AND, IN EFFECT, WALKED AWAY FROM THE SITE. THE RI/FS CONDUCTED AT THE SITE REVEALED SOILS, SEDIMENTS, SURFACE WATER AND GROUND WATER CONTAMINATED WITH LEAD, CADMIUM, ARSENIC, ANTIMONY AND OTHER HEAVY METALS.
THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES: EXCAVATION OF SOILS AND SEDIMENTS CONTAINING CONTAMINANT LEVELS ABOVE THOSE SET IN THE RISK ASSESSMENT; FIXATION OF THE EXCAVATED SOILS/SEDIMENTS AND ONSITE DISPOSAL OF THE SOLIDIFIED MATRIX INTO A CELL BUILT TO FLORIDA CLASS I SANITARY LANDFILL STANDARDS; GROUNDWATER REMOVAL AND TREATMENT OF THE UNDERLYING AQUIFERS; TREATMENT AND DISCHARGE OF CONTAMINATED SURFACE WATER FROM THE ONSITE SWAMP AND THE OFFSITE STEELE CITY BAY AREA; AND MONITORING PROGRAM FOR POTABLE WATER WELLS LOCATED WITHIN A ONE-MILE RADIUS OF THE SITE. NEEDED INSTITUTIONAL CONTROLS WILL BE ASSESSED AND IMPLEMENTED DURING THE REMEDIAL DESIGN/REMEDIAL ACTION (RD/RA) PHASE OF THE PROJECT. ESTIMATED CAPITAL COSTS OF THE SELECTED REMEDY IS $14,318,544 WITH ANNUAL O&M COSTS OF $25,631.
REMEDY :
- EXCAVATION OF SOILS AND SEDIMENTS CONTAINING CONTAMINANT LEVELS

ABOVE THOSE SET IN THE RISK ASSESSMENT.
- FIXATION OF THE EXCAVATED SOILS/SEDIMENTS AND ONSITE DISPOSAL OF THE SOLIDIFIED MATRIX INTO A CELL BUILT TO FLORIDA CLASS I SANITARY LANDFILL STANDARDS.
- GROUNDWATER REMOVAL AND TREATMENT OF THE UNDERLYING AQUIFERS.
- TREATMENT AND DISCHARGE OF CONTAMINATED SURFACE WATER FROM THE ONSITE SWAMP AND THE OFFSITE STEELE CITY BAY AREA.
- NEEDED INSTITUTIONAL CONTROLS WILL BE ASSESSED AND IMPLEMENTED DURING THE REMEDIAL DESIGN/REMEDIAL ACTION (RD/RA) PHASE OF THE PROJECT.
- A MONITOR PROGRAM FOR POTABLE WATER WELLS LOCATED WITHIN A ONE-MILE RADIUS OF THE SITE.
- OPERATION AND MAINTENANCE (O&M) ACTIVITIES WILL INCLUDE;
    - GROUNDWATER MONITORING.
    - MAINTENANCE OF ONSITE DISPOSAL CELL.
- A LABORATORY STUDY WILL BE PERFORMED BY EPA'S ENVIRONMENTAL RESPONSE TEAM TO ASSESS THE APPLICABILITY OF THE SOILS WASHING TECHNOLOGY AT THE SITE. SHOULD THE RESULTS BE POSITIVE, CONSIDERATION WILL BE GIVEN TO INTEGRATING THE SOILS WASHING TECHNOLOGY INTO THE SELECTED REMEDY. THE LABORATORY STUDY IS EXPECTED TO TAKE APPROXIMATELY TWO MONTHS TO COMPLETE AND WILL BE UNDERTAKEN IMMEDIATELY UPON THE AVAILABILITY OF FUNDING.

Item 14

REGION :5
SITE NAME :ENVIRO-CHEM CORP
LOCATION :ZIONSVILLE, IN
NTIS REPORT #:EPA/ROD/R05-87/049
ROD DATE :870925
ABSTRACT :

THE NORTHSIDE SANITARY LANDFILL (NSL) AND THE ENVIRONMENTAL CONSERVATION AND CHEMICAL CORPORATION (ECC) ARE ADJACENT SITES LOCATED IN BOONE COUNTY, INDIANA. THESE TWO SITES HAVE BEEN COMBINED INTO THE FIRST REMEDIAL ACTION BECAUSE OF THEIR CLOSE PROXIMITY, AND DUE TO SIMILARITIES IN CONTAMINANTS, AFFECTED MEDIA, REMEDIATION NEEDS AND REGULATORY STATUS. BETWEEN 1977 AND 1982, ECC WAS INVOLVED IN THE RECOVERY/RECLAMATION/BROKERING OF PRIMARY SOLVENTS, OILS AND OTHER WASTES RECEIVED FROM INDUSTRIAL CLIENTS. WASTE PRODUCTS WERE RECEIVED IN DRUMS AND BULK TANKERS AND PREPARED FOR SUBSEQUENT RECLAMATION OR DISPOSAL. ONSITE ACCUMULATION OF CONTAMINATED STORMWATER, POOR MANAGEMENT OF DRUM INVENTORY AND SEVERAL SPILLS PROMPTED STATE AND U.S. EPA INVESTIGATION OF ECC. BETWEEN 1977 AND 1981 SOME STILL BOTTOM AND OILY LIQUID WASTES WERE PERMITTED TO BE DISPOSED OF AT NSL. IN MAY 1982, ECC WAS ORDERED BY THE COURT TO CLOSE AND ENVIRONMENTALLY SECURE THE SITE FOR FAILURE TO PRODUCE HAZARDOUS WASTE INVENTORIES. TWO EMERGENCY ACTIONS IN MARCH 1983 AND MARCH 1985 ELIMINATED THE MAJOR SOURCES OF CONTAMINATION AT THE SITE. SOILS ON SITE CONTAIN HIGH CONCENTRATIONS OF ORGANIC COMPOUNDS INCLUDING TRANS-1,2-DCE, TRICHLOROETHENE, 1,1-DCE AND VINYL CHLORIDE. THE POSSIBILITY EXISTS FOR THE PRESENCE OF OTHER SOURCES OF CONTAMINATION AT THE SITE.

ABSTRACTS FOR SANITARY LANDFILLS
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SOMETIME BETWEEN 1955 AND 1962, NSL BEGAN LANDFILL OPERATIONS. FROM 1972 TO 1973, NUMEROUS OPERATIONAL DEFICIENCIES, INCLUDING FAILURE TO COVER REFUSE, SURFACE BURNING, UNDERGROUND FIRES, LEACHATE AND VERMIN PROBLEMS RESULTED IN THREE INDIANA STATE BOARD OF HEALTH (ISBH) ORDERS TO CEASE OPERATIONS. OPERATIONS WERE PERMITTED AT THE SITE BY FEBRUARY 1975. BY NOVEMBER 1982, NSL HAD ACCEPTED AT LEAST 16 MILLION GALLONS OF HAZARDOUS SUBSTANCES. GROUND WATER, SURFACE WATER, SOIL AND SEDIMENTS ARE CONTAMINATED WITH INORGANICS, ORGANICS, PESTICIDES, ACIDS, BASE-NEUTRAL COMPOUNDS, OILS AND VOCS INCLUDING BENZENE, 1,1-DCE AND TCE.

THE RECOMMENDED ALTERNATIVE FOR THE TWO SITES COMBINED INCLUDES; IMPLEMENTING DEED AND ACCESS RESTRICTIONS TO PREVENT FUTURE SITE DEVELOPMENT; EXCAVATION AND DEWATERING OF 4,200 YD3 OF LEACHATE SOILS AND SEDIMENTS WITH ONSITE DISPOSAL UNDER A RCRA MULTI-LAYER CAP; SOIL CAPPING ON NON-RCRA CAPPED AREAS; SITE GRADING; DEMOLITION OF FORMER ECC PROCESS BUILDING FOLLOWED BY CAPPING; RE-ROUTING OF SURFACE WATERS; LEACHATE COLLECTION AND TREATMENT AT NSL; AND GROUND WATER COLLECTION AND ONSITE TREATMENT FOR BOTH SITES. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $33,900,000.

REMEDY :
THE SELECTED REMEDIAL ALTERNATIVE IS GROUND WATER INTERCEPTION AND TREATMENT PLUS CAPPING, AND INCLUDES THE FOLLOWING MAJOR COMPONENTS;

- DEED AND ACCESS RESTRICTIONS TO PREVENT FUTURE DEVELOPMENT OF THE SITES.
- A MULTI-LAYER CAP OVER BOTH SITES WHICH MEETS THE REQUIREMENTS OF THE RESOURCE CONSERVATION AND RECOVERY ACT.
- RE-ROUTING SURFACE WATERS TO REDUCE POTENTIAL FOR CONTAMINANT MOVEMENT TO SURFACE WATER.
- LEACHATE COLLECTION AND TREATMENT FOR NSL.
- GROUND WATER COLLECTION AND TREATMENT FOR BOTH SITES.
- MONITORING TO ENSURE EFFECTIVENESS OF REMEDY COMPONENTS LISTED ABOVE.

Item 15

REGION :7
SITE NAME :ELLISVILLE
LOCATION :ST. LOUIS COUNTY, MO
NTIS REPORT #:EPA/ROD/R07-86/006
ROD DATE :860929
ABSTRACT :

THE ELLISVILLE SITE AREA, LOCATED IN WEST ST. LOUIS COUNTY, MISSOURI, IS COMPOSED OF THREE NON-CONTIGUOUS PROPERTIES: THE ROSALIE PROPERTY; THE CALLAHAN PROPERTY; AND THE BLISS PROPERTY. THE ROSALIE AND CALLAHAN PROPERTIES WERE THE FOCUS OF THE JULY 1985 FIRST REMEDIAL ACTION. THIS SECOND REMEDIAL ACTION FOCUSES ON THE BLISS PROPERTY AND FOUR CONTIGUOUS PROPERTIES: THE DUBMAN AND WEINGART PROPERTY; THE PRIMM PROPERTY; THE WADE AND MERCHANTILE TRUST COMPANY PROPERTY; AND THE RUSSELL, EVELYN AND JERRY RUSSELL BLISS PROPERTY. LAND USE IN THE SITE VICINITY CONSISTS OF RURAL, RECREATIONAL AND RAPIDLY DEVELOPING

RESIDENTIAL AREAS. APPROXIMATELY 1,000 PEOPLE CURRENTLY LIVE WITHIN A ONE-MILE RADIUS OF THE SITE. DURING THE 1960S AND 1970S, RUSSELL BLISS OWNED AND OPERATED THE BLISS WASTE OIL COMPANY, A BUSINESS ENGAGED IN THE TRANSPORTATION AND DISPOSAL OF WASTE OIL PRODUCTS, INDUSTRIAL WASTES AND CHEMICAL WASTES. THE COMPANY'S HEADQUARTERS AND OPERATING FACILITIES WERE LOCATED AT THE SITE. IN SEPTEMBER 1980 THE MISSOURI DEPARTMENT OF NATURAL RESOURCES AND THE U.S. EPA CONDUCTED AN ONSITE INVESTIGATION. CONCLUDING REPORTS INDICATED PITS HAD BEEN DUG AND USED FOR INDUSTRIAL WASTE DISPOSAL; DRUMS OF WASTE HAD BEEN BURIED ON SITE; AND LIQUID WASTES HAD BEEN APPLIED ON THE GROUND. THE TYPES OF WASTE WERE REPORTED TO INCLUDE SOLVENTS, OILS, PESTICIDES, AND CAN COATING MATERIALS. DIOXIN IS CURRENTLY THE ONLY CONTAMINANT OF THREAT. APPROXIMATELY 20,000 CUBIC YARDS OF SOIL, AND AN UNKNOWN VOLUME OF DUST ARE CONTAMINATED WITH 2,3,7,8-TCDD (TCDD OR DIOXIN).

THE SELECTED REMEDY FOR THE DIOXIN CONTAMINATED SOILS AND MATERIALS INCLUDES: EXCAVATION AND CONTAINERIZATION IN SEMI-BULK SACKS OF DIOXIN CONTAMINATED SOILS AND MATERIAL EXCEEDING ONE PART PER BILLION; INTERIM ONSITE STORAGE OF THE CONTAINERIZED WASTES IN A METAL BUILDING ENCLOSURE; O&M WILL INCLUDE MAINTENANCE OF THE SECURITY SYSTEM, MAINTENANCE OF SITE RUNON/RUN OFF CONTROLS AND GROUND WATER SAMPLING AND ANALYSIS. FINAL REMEDIAL ACTION FOR DIOXIN-CONTAMINATED SOIL HAS NOT BEEN SELECTED. THE SELECTED REMEDY FOR BURIED DRUMS AND NON-DIOXIN HAZARDOUS WASTE MIXTURES INCLUDES; EXCAVATION, SAMPLING, AND OVERPACKING OF BURIED DRUMS; EXCAVATION OF UNCONTAINERIZED HAZARDOUS WASTES AND CONTAMINATED SOILS AND MATERIALS; DRUMS AND WASTE MIXTURES CONTAINING LIQUIDS OR OTHER SPECIFIED HAZARDOUS WASTES SUBJECT TO LAND DISPOSAL PROHIBITIONS WILL BE DISPOSED BY INCINERATION AT AN OFFSITE COMMERCIAL HAZARDOUS WASTE INCINERATION FACILITY OPERATING UNDER AN APPROPRIATE RCRA PERMIT OR INTERIM STATUS; DRUMS AND WASTE MIXTURES CONTAINING HAZARDOUS SUBSTANCES SUITABLE FOR LAND DISPOSAL WILL BE DISPOSED OF AT AN OFFSITE COMMERCIAL HAZARDOUS WASTE LAND DISPOSAL FACILITY OPERATING UNDER AN APPROPRIATE RCRA PERMIT OR INTERIM STATUS OR, IF COST-EFFECTIVE, AT AN INCINERATION FACILITY AS DESCRIBED ABOVE; NON-HAZARDOUS MATERIAL AND DEBRIS MAY BE DISPOSED OF AT A PERMITTED SANITARY LANDFILL. FOR BOTH DIOXIN AND NON-DIOXIN REMEDY COMPONENTS, SITE RESTORATION ACTIVITIES WILL INCLUDE BACKFILL, REGRADING AND SEEDING WHERE APPROPRIATE. THE ESTIMATED PRESENT WORTH COST FOR BOTH REMEDIAL COMPONENTS IS $20,200,000.

REMEDY :

THE SELECTED REMEDY FOR THE OPERABLE UNIT FOR THE 2,3,7,8-TCDD CONTAMINATED SOILS AND MATERIALS INCLUDES THE FOLLOWING MAJOR COMPONENTS;

- EXCAVATION AND CONTAINERIZATION IN SEMI-BULK SACKS OF 2,3,7,8-TCDD CONTAMINATED SOILS AND MATERIAL EXCEEDING ONE PART PER BILLION (PPB).
- INTERIM ONSITE STORAGE OF THE CONTAINERIZED WASTES IN A METAL BUILDING ENCLOSURE.
- OPERATION AND MAINTENANCE REQUIREMENTS TO ENSURE CONTINUED EFFECTIVENESS OF THE REMEDY WILL INCLUDE MAINTENANCE OF THE SECURITY SYSTEM, MAINTENANCE OF SITE RUNON/RUNOFF CONTROLS

AND GROUND WATER SAMPLING AND ANALYSIS.
THE SELECTED REMEDY FOR BURIED DRUMS AND NON-2,3,7,8-TCDD HAZARDOUS WASTE MIXTURES INCLUDES THE FOLLOWING MAJOR COMPONENTS:
- EXCAVATION, SAMPLING, AND OVERPACKING OF BURIED DRUMS.
- EXCAVATION OF UNCONTAINERIZED HAZARDOUS WASTES AND CONTAMINATED SOILS AND MATERIALS.
- DRUMS AND WASTE MIXTURES CONTAINING LIQUIDS OR OTHER SPECIFIED HAZARDOUS WASTES SUBJECT TO LAND DISPOSAL PROHIBITIONS WILL BE DISPOSED BY INCINERATION AT AN OFFSITE COMMERCIAL HAZARDOUS WASTE INCINERATION FACILITY OPERATING UNDER AN APPROPRIATE RCRA PERMIT OR INTERIM STATUS.
- DRUMS AND WASTE MIXTURES CONTAINING HAZARDOUS SUBSTANCES SUITABLE FOR LAND DISPOSAL WILL BE DISPOSED OF AT AN OFFSITE COMMERCIAL HAZARDOUS WASTE LAND DISPOSAL FACILITY OPERATING UNDER AN APPROPRIATE RCRA PERMIT OR INTERIM STATUS OR, IF COST-EFFECTIVE, AT AN INCINERATION FACILITY AS DESCRIBED ABOVE.
- NON-HAZARDOUS MATERIAL AND DEBRIS MAY BE DISPOSED OF AT A PERMITTED SANITARY LANDFILL.

FOR BOTH REMEDIES DESCRIBED ABOVE, SITE RESTORATION ACTIVITIES WILL INCLUDE BACKFILL, REGRADING AND SEEDING WHERE APPROPRIATE.

Item 16

REGION :8
SITE NAME :DENVER RADIUM CARD CORP
LOCATION :DENVER, CO
NTIS REPORT #:EPA/ROD/R08-87/012
ROD DATE :870630
ABSTRACT :

THE DENVER RADIUM/CARD CORPORATION PROPERTY IS A 17.2-ACRE SITE LOCATED IN DENVER, COLORADO. IN 1979, THE EPA DISCOVERED A REFERENCE TO THE NATIONAL RADIUM INSTITUTE IN A 1916 U.S. BUREAU OF MINES REPORT. SUBSEQUENT FIELD RESEARCH REVEALED THE PRESENCE OF THIRTY-ONE RADIOACTIVE SITES IN THE DENVER METROPOLITAN AREA, ONE OF THESE BEING CARD PROPERTY, THE LOCATION OF THE ORIGINAL PITTSBURGH RADIUM COMPANY PROCESSING FACILITY. THE SITE CONSISTS OF FIVE BUILDINGS AND AN OIL AND WASTE WATER POND AT THE EASTERN BOUNDARY. THERE IS NO SERIOUS PUBLIC HEALTH RISK AT PRESENT FROM RADIUM OR ITS DECAY PRODUCTS, MOST NOTABLE RADION GAS. HOWEVER, THERE IS THE POTENTIAL FOR INCREASED PUBLIC HEALTH RISK IF THE RADIUM CONTAMINATED MATERIALS ARE MISUSED OR INADVERTENTLY SPREAD. CURRENTLY, RADIUM HAS BEEN DETECTED IN THE SOIL, SEDIMENT AND UNDERNEATH THE TRUE TRUSS BUILDING.

EPA'S PREFERRED REMEDIAL ACTION FOR THE CARD PROPERTY IS PERMANENT OFFSITE DISPOSAL. HOWEVER, THIS ALTERNATIVE CAN NOT BE IMPLEMENTED UNTIL A SUITABLE OFFSITE FACILITY IS DESIGNATED. IN THE INTERIM, THE SELECTED REMEDY IS TEMPORARY ONSITE BUILDING STORAGE. THIS INCLUDES: EXCAVATION OF APPROXIMATELY 4,000 CUBIC YARDS OF RADIUM-CONTAMINATED SOIL AND SEDIMENT; STORAGE OF THE CONTAMINATED MATERIAL WITHIN REINFORCED SYNTHETIC BAGS PLACED WITHIN THE TRUE TRUSS BUILDING AND WITHIN POSSIBLE ADDITIONS TO THE BUILDING; OPTIONAL STAGING OR STORAGE

OF CONTAMINATED MATERIAL FROM SELECTED OTHER DENVER RADIUM SITE PROPERTIES ON THE CARD PROPERTY; FINAL OFFSITE DISPOSAL OF ALL CONTAMINATED MATERIAL TO A FACILITY SUITABLE FOR THE PERMANENT WASTE DISPOSAL; AND DECONTAMINATION AND DISMANTLING OF TRUE TRUSS BUILDING AND ANY ADDITIONS WITH DISPOSAL OF THE MATERIAL IN A SANITARY LANDFILL. THE PRESENT WORTH COST FOR THE SELECTED REMEDY IS $1,148,000 WITH PRESENT WORTH O&M COSTS OF $89,500.

REMEDY :

THIS OPERABLE UNIT OF THE DENVER RADIUM SITE ADDRESSES THE CONTAMINATION PRESENT ON THE CARD CORPORATION PROPERTY ("CARD PROPERTY"). THE HAZARDOUS SUBSTANCES OF PRIMARY CONCERN THAT HAVE BEEN RELEASED AND CONTINUE TO POSE A SIGNIFICANT THREAT OF BEING RELEASED INTO THE ENVIRONMENT ARE RADIUM AND ITS ASSOCIATED DECAY PRODUCTS.

EPA'S PREFERRED REMEDIAL ACTION ALTERNATIVE FOR THE CARD PROPERTY IS PERMANENT OFFSITE DISPOSAL. HOWEVER, UNTIL A FACILITY SUITABLE FOR PERMANENT DISPOSAL OF THE CARD PROPERTY MATERIAL IS DESIGNATED AND, IF NECESSARY, ACQUIRED AND DEVELOPED, THIS ALTERNATIVE CANNOT BE IMPLEMENTED. PURSUANT TO CERCLA SECTION 104(C)(3)(C)(II), IT IS THE RESPONSIBILITY OF THE STATE OF COLORADO TO ASSURE THE AVAILABILITY OF THE DISPOSAL FACILITIES FOR OFFSITE DISPOSAL OF THE CARD PROPERTY MATERIAL. ALTHOUGH BOTH THE EPA AND THE STATE OF COLORADO ARE CONTINUING TO SEEK A PERMANENT DISPOSAL SITE, THE STATE PREDICTS THAT THIS PROCESS COULD TAKE UP TO FIVE YEARS. IN ORDER TO PREVENT OR MINIMIZE THE THREAT TO PUBLIC HEALTH, WELFARE, AND THE ENVIRONMENT, GIVEN THE LENGTH OF TIME UNTIL PERMANENT OFFSITE DISPOSAL OF THE MATERIAL CAN BE IMPLEMENTED, THE EPA DETERMINED THAT A REMEDIAL ACTION ALTERNATIVE WHICH INCLUDES A TEMPORARY RESPONSE ACTION SHOULD BE IMPLEMENTED AT THE CARD PROPERTY.

THE SELECTED REMEDY FOR THE CARD PROPERTY IS TEMPORARY ONSITE BUILDING STORAGE/PERMANENT OFFSITE DISPOSAL. THIS ALTERNATIVE WILL ATTAIN A DEGREE OF CLEANUP OF THE HAZARDOUS SUBSTANCES WHICH WILL ASSURE PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT. THIS REMEDIAL ACTION ALTERNATIVE ENTAILS;

- EXCAVATION OF APPROXIMATELY 4,000 CUBIC YARDS OF RADIUM-CONTAMINATED SOIL AND SEDIMENT FROM THE CARD PROPERTY;
- STORAGE OF THE CONTAMINATED MATERIAL WITHIN REINFORCED SYNTHETIC BAGS PLACED WITHIN THE TRUE TRUSS BUILDING AND WITHIN POSSIBLE ADDITIONS TO THE BUILDING;
- OPTIONAL STAGING OR STORAGE OF CONTAMINATED MATERIAL FROM SELECTED OTHER DENVER RADIUM SITE PROPERTIES ON THE CARD PROPERTY - THE TOTAL AMOUNT OF MATERIAL TO BE STAGED OR STORED ON THE CARD PROPERTY NOT TO EXCEED 13,000 CUBIC YARDS INCLUDING THE CONTAMINATED MATERIAL ALREADY PRESENT ON THE CARD PROPERTY;
- FINAL REMOVAL OF ALL CONTAMINATED MATERIAL TO A FACILITY SUITABLE FOR THE PERMANENT DISPOSAL OF DENVER RADIUM SITE WASTES; AND
- DECONTAMINATION AND DISMANTLING OF TRUE TRUSS BUILDING AND ANY ADDITIONS AND DISPOSAL OF THE MATERIAL IN A SANITARY LANDFILL.

THE PRESENT WORTH COST OF THE SELECTED REMEDY IS $1,148,000 ASSUMING A DISCOUNT PERIOD OF FIVE YEARS AND A DISCOUNT RATE OF 10%. THE COST INCLUDES EXCAVATION OF ALL CONTAMINATED MATERIAL, PLACEMENT OF THE

MATERIAL IN REINFORCED SYNTHETIC BAGS, PLACEMENT OF THE BAGS IN THE TRUE TRUSS BUILDING, AND MAINTENANCE AND MONITORING OF THE BAGS AND BUILDING FOR 5 YEARS. THE COST ALSO INCLUDES REMOVAL AND TRANSPORTATION OF THE CONTAMINATED MATERIAL TO AN OFFSITE DISPOSAL FACILITY, AS WELL AS DISMANTLING AND DECONTAMINATING THE BUILDING AND TRANSPORTING THE BUILDING MATERIAL TO A SANITARY LANDFILL.

OPERATION AND MAINTENANCE ACTIVITIES WILL BE REQUIRED TO ENSURE THE EFFECTIVENESS OF THE TEMPORARY STORAGE FACILITY. THE MAXIMUM TOTAL OF DISCOUNTED ANNUAL OPERATION AND MAINTENANCE COSTS, USING A DISCOUNT PERIOD OF FIVE YEARS AND A DISCOUNT RATE OF 10%, IS $89,500. OPERATION AND MAINTENANCE ACTIVITIES INCLUDE SITE INSPECTIONS AND POSSIBLE MINOR STRUCTURAL REPAIRS TO THE TEMPORARY STORAGE FACILITY. THESE ACTIVITIES WILL BE CONSIDERED PART OF THE APPROVED REMEDY AND WILL BE ELIGIBLE FOR TRUST FUND MONIES FOR THE ENTIRE PERIOD THAT THE TEMPORARY STORAGE FACILITY IS OPERATIONAL. THE STATE OF COLORADO WILL SHARE RESPONSIBILITY FOR ALL OPERATION AND MAINTENANCE COSTS OF THE TEMPORARY FACILITY IN THE SAME MANNER AS OTHER ASPECTS OF REMEDIAL ACTION.

THE EPA IS UNDERTAKING ADDITIONAL FEASIBILITY STUDIES TO EVALUATE REMEDIAL ACTION ALTERNATIVES AT THE OTHER DENVER RADIUM SITE OPERABLE UNITS AND WILL COMPLETE A RECORD OF DECISION OR AN ACTION MEMORANDUM FOR EACH OF THE OPERABLE UNITS FOR WHICH A REMEDY HAS NOT ALREADY BEEN SELECTED.

Item 17

REGION :5
SITE NAME :INDUSTRIAL EXCESS LANDFILL
LOCATION :UNIONTOWN, OH
NTIS REPORT #:EPA/ROD/R05-87/056
ROD DATE :870930
ABSTRACT :

THE INDUSTRIAL EXCESS LANDFILL (IEL) IS A 30-ACRE CLOSED SANITARY LANDFILL LOCATED IN UNIONTOWN, STARK COUNTY, OHIO. OVER 400 RESIDENTIAL HOMES, LOCATED WITHIN A 0.5 MILE RADIUS OF THE LANDFILL, RELY ENTIRELY ON INDIVIDUAL OR PRIVATE WELL SUPPLIES FOR DRINKING WATER. PRIOR TO 1961, THE LANDFILL PROPERTY MAY HAVE BEEN UTILIZED AS A COAL MINE AND LATER FOR MINING SAND AND GRAVEL. GRADUALLY, THE MININS/EXCAVATION PIT WAS CONVERTED INTO A LANDFILL WHICH RECEIVED A VARIETY OF WASTES. BETWEEN 1964 AND 1968, THE SITE WAS USED TO STORE FLY ASH, MASONRY RUBBLE, PAPER AND LUMBER SCRAP. FROM 1968 TO 1980, IEL ACCEPTED MUNICIPAL, COMMERCIAL, INDUSTRIAL AND CHEMICAL WASTES OF SUBSTANTIALLY UNDETERMINED AND UNKNOWN COMPOSITION, PRIMARILY FROM THE NEARBY RUBBER INDUSTRY. LARGE QUANTITIES OF CHEMICAL AND LIQUID WASTE WERE DUMPED ONTO THE GROUND EITHER FROM 55-GALLON DRUMS OR FROM TANKER TRUCKS. IN JANUARY OF 1972, THE STARK COUNTY BOARD OF HEALTH (SCBH) ORDERED THE DUMPING OF CHEMICAL WASTES STOPPED. IN 1980, DUE TO PUBLIC CONCERN AND FACILITY VOLUME LIMITATIONS, THE LANDFILL WAS ORDERED TO CLOSE. CLOSURE PLANS WERE COMPLETED AND THE SITE WAS COVERED AND SEEDED. IN 1983, COMPLAINTS BY COMMUNITY RESIDENTS PROMPTED INVESTIGATIONS TO ASCERTAIN WHETHER DRINKING WATER WAS CONTAMINATED AND IF HEALTH RISKS EXISTED.

THE RESULTS INDICATED THAT RESIDENTIAL WELLS WERE CONTAMINATED WITH INORGANICS, ORGANICS AND VOCS.

THE SELECTED REMEDIAL ACTION INVOLVES PROVISION OF AN ALTERNATE WATER SUPPLY TO APPROXIMATELY 100 HOMES LOCATED WEST OF THE SITE. EPA HAS DEFERRED THE DECISION ON THE SOURCE OF THIS WATER UNTIL THE COMPLETION OF INITIAL DESIGN ACTIVITIES. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION RANGES FROM $1,715,870 TO $2,289,060 PENDING WATER SOURCE SELECTION.

REMEDY :

- PROVIDE ALTERNATE WATER TO AN AREA COMPRISED OF APPROXIMATELY 100 HOMES LOCATED WEST OF THE IEL SITE. THIS ACTION CONSTITUTES AN OPERABLE UNIT OF THE OVERALL REMEDY FOR THE SITE. THE COMPREHENSIVE REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) DOCUMENTS WILL EVALUATE ALTERNATIVES FOR THE OVERALL SITE REMEDY.

Item 18

REGION :4
SITE NAME :POWERSVILLE LANDFILL
LOCATION :POWERSVILLE, GA
NTIS REPORT #:EPA/ROD/R04-87/029
ROD DATE :870930
ABSTRACT :

THE POWERSVILLE LANDFILL, WHICH OCCUPIES APPROXIMATELY 15 ACRES, IS LOCATED IN PEACH COUNTY, GEORGIA. GENERAL CROP FARMING IS THE MAJOR AGRICULTURAL PRACTICE IN THE REGION, HOWEVER, CATTLE FARMS AND ORCHARDS ARE ALSO COMMON. LOCALLY THE PROVIDENCE AQUIFER SYSTEM IS A SOURCE OF WATER FOR BOTH CONSUMPTION AND IRRIGATION. FROM THE EARLY 1940S TO 1969 THE LANDFILL SITE WAS A BORROW PIT WHICH PROVIDED SAND AND FILL MATERIAL TO THE COUNTY FOR LOCAL USE. DURING 1969 PEACH COUNTY BEGAN OPERATING THE SITE AS A SANITARY LANDFILL RECEIVING MUNICIPAL AND INDUSTRIAL WASTES. IN DECEMBER 1972 THE GEORGIA DEPARTMENT OF NATURAL RESOURCES ENVIRONMENTAL PROTECTION DIVISION SUGGESTED THE SEPARATION AND MAINTENANCE OF AREAS FOR PESTICIDES AND ASSOCIATED WASTES WHICH WAS ATTAINED. DISPOSAL RECORDS INDICATE PESTICIDE MANUFACTURING WASTES WERE DISPOSED OF IN THE MUNICIPAL SECTION OF THE LANDFILL PRIOR TO JUNE 1973 AND IN THE HAZARDOUS WASTE AREA BETWEEN JUNE 1973 AND 1976. NEITHER THE QUANTITY NOR THE LOCATION OF THE WASTE IN THE MUNICIPAL LANDFILL IS KNOWN. THE LANDFILL WAS CLOSED IN 1979 DUE TO ITS LOCATION IN A HIGHLY PERMEABLE SAND AND GRAVEL AQUIFER. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL AND GROUND WATER INCLUDE; VOCS (VINYL CHLORIDE), ORGANICS, HEAVY METALS (LEAD AND CHROMIUM) AND PESTICIDES.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES; SURFACE CAPPING OF HAZARDOUS WASTE AND MUNICIPAL FILL AREAS USING ARTIFICIAL MATERIAL OR CLAY, WITH GRADING, DRAINAGE AND CLOSURE; INSTALLATION OF EIGHT ADDITIONAL MONITOR WELLS (AT A MINIMUM) IN THE UPPER REGION OF THE AQUIFER TO DETERMINE CAP AREA LEACHING OR MIGRATION; AND EXTENSION OF THE MUNICIPAL WATER SUPPLY PIPE LINE AS AN ALTERNATE WATER SUPPLY. THE STATE OF GEORGIA INDICATES AN INABILITY TO PAY THEIR PORTION OF THE COSTS, WHICH IS 50%, IF THE PRPS DO NOT COME FORTH TO CONDUCT THE

REMEDIAL ACTION. THE TOTAL PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $4,000,000 WITH PRESENT WORTH O&M OF $577,013.
REMEDY :
THE RECOMMENDED ALTERNATIVE FOR THE POWERSVILLE LANDFILL SITE INCLUDES;
- SURFACE CAPPING OF THE HAZARDOUS WASTE AND MUNICIPAL FILL AREAS. THE CAP FOR THE MUNICIPAL AREA WILL BE CONSTRUCTED IN ACCORDANCE WITH EPA GUIDANCE DOCUMENT, COVERS FOR UNCONTROLLED HAZARDOUS WASTE SITES, EPA/540/2-85/002. THE CAP FOR THE HAZARDOUS WASTE AREA WILL BE CONSTRUCTED USING THE SAME GUIDANCE INDICATED ABOVE, WITH THE ADDITIONAL STIPULATION THAT THE TOP LINER BE CONSTRUCTED WITH AN ARTIFICIAL MATERIAL OR EQUIVALENT TWO FOOT THICK LAYER OF COMPACTED CLAY. CLOSURE WILL BE IN ACCORDANCE WITH APPLICABLE STATE AND FEDERAL REGULATIONS.
- GRADING OF THE AREA TO ENSURE PROPER SLOPE AND DRAINAGE OF WATER OFF OF THE CAP. DRAINAGE WOULD BE DESIGNED TO DIRECT SURFACE RUNOFF TOWARD THE PRESENT NATURAL DRAINAGE CHANNELS.
- INSTALLATION OF A MINIMUM OF EIGHT ADDITIONAL MONITOR WELLS IN THE UPPER REGION OF THE AQUIFER TO DETERMINE IF CONTAMINANTS ARE LEACHING OR MIGRATING FROM THE CAPPED AREAS.
- PROVISION OF AN ALTERNATE DRINKING WATER SOURCE. THE MOST LIKELY ALTERNATIVE FOR THIS WATER IS THE BYRON MUNICIPAL WATER SUPPLY. THE PRESENT TERMINATION POINT OF THIS WATER SUPPLY IS APPROXIMATELY 2 MILES NORTH OF THE SITE ON GEORGIA HIGHWAY 49.
- SITE DEED RESTRICTIONS TO PREVENT ANY DRILLING OR CONSTRUCTION ACTIVITIES THAT WOULD COMPROMISE THE INTEGRITY OF THE REMEDY. DEED RESTRICTIONS NEED ALSO BE ESTABLISHED TO PROHIBIT THE DRILLING OF WATER WELLS IN THE AREA BETWEEN THE SITE AND MULE CREEK, THE AREA IN WHICH GROUNDWATER IS LIKELY TO BE AFFECTED BY THE LANDFILL.
- OPERATION AND MAINTENANCE (O&M) WILL INCLUDE REGULAR INSPECTION OF THE CAP FOR SIGNS OF EROSION, SETTLEMENT OR DETERIORATION. INSPECTIONS SHOULD BE CONDUCTED FREQUENTLY DURING THE FIRST SIX MONTHS. PERIODIC MONITORING OF NEW AND EXISTING MONITOR WELLS WILL BE REQUIRED.

Item 19

REGION :5
SITE NAME :WASTE DISPOSAL ENGINEERING
LOCATION :ANDOVER, MN
NTIS REPORT #:EPA/ROD/R05-88/063
ROD DATE :871231
ABSTRACT :
THE WASTE DISPOSAL ENGINEERING (WDE) SITE, CONSISTING OF 73 ACRES OF A 114-ACRE DUMP, IS LOCATED IN THE CITY OF ANDOVER (FORMERLY GROWN TOWNSHIP), ANOKA COUNTY, MINNESOTA. THE SITE AREA IS CHARACTERIZED BY LOW RELIEF WITH SHALLOW WATER TABLES AND NUMEROUS WETLANDS. DURING THE PAST YEAR, MOST EXTENSIVE RESIDENTIAL DEVELOPMENT HAS BEEN OR WILL BE CONSTRUCTED AND PLANNED FOR AROUND THE SITE. THE ORIGINAL DUMP WAS ESTABLISHED IN 1963 AND OPERATED UNTIL 1980. DISPOSAL OF WASTES WAS BY BURIAL OR BURNING IN PITS OR TRENCHES. IN 1968, WDE PURCHASED THE DUMP

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AND WAS LICENSED BY GROW TOWNSHIP TO OPERATE AS A SANITARY LANDFILL. IN 1970, WDE SUBMITTED A SOLID WASTE PERMIT APPLICATION WHICH INCLUDED A PROPOSAL TO BUILD A SPECIALLY CONSTRUCTED PIT FOR HAZARDOUS WASTE DISPOSAL. A PERMIT WAS ISSUED IN MARCH 1971, TO OPERATE THE SITE AS A SANITARY LANDFILL. THE PIT RECEIVED APPROXIMATELY 6,600 CONTAINERS (RANGING FROM ONE GALLON PAIL TO FIFTY-FIVE GALLON DRUMS) FROM 1972 TO 1974, IN THE FORM OF ACIDS, CAUSTICS, WASTE PAINTS, SPENT SOLVENTS, PLATING SLUDGES, AND CYANIDES. AN UNDETERMINED QUANTITY OF HAZARDOUS WASTE, MUCH OF IT AS BULK LOADS, WAS DISPOSED THROUGHOUT THE LANDFILL. OF THE 3,200,000 GALLONS OF HAZARDOUS WASTE THOUGHT TO BE DISPOSED AT THE SITE, ONLY TEN PERCENT IS THOUGHT TO HAVE BEEN DISPOSED OF IN THE PIT. THE AREA OF REFUSE/NON-HAZARDOUS WASTE DISPOSAL COVERS AN AREA OF 73 ACRES AND CONTAINS APPROXIMATELY 2,500,000 YD3 OF WASTE. MUCH OF THE LANDFILL IS COVERED BY LIME SLUDGE. THE LANDFILL AND PIT HAVE REMAINED ABANDONED AND INACTIVE SINCE FEBRUARY 1984. THE SITE PROPERTY HAS GONE THROUGH TAX FORFEITURE SO THAT IT IS CURRENTLY PROPERTY OF THE STATE OF MINNESOTA WITH ADMINISTRATION BY THE COUNTY. CURRENTLY, THE PIT AREA SHOWS THE MOST SERIOUS GROUND WATER DEGRADATION AND IS THE DOMINANT SOURCE OF CONTAMINANTS ENTERING COON CREEK. THE PRIMARY CONTAMINANTS OF CONCERN INCLUDE VOCS AND ORGANICS.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES; GROUND WATER PUMP AND TREATMENT USING CARBON ADSORPTION WITH OFFSITE DISCHARGE TO COON CREEK; INSTALLATION OF A RCRA CAP TO COMPLETELY COVER THE 73-ACRE LANDFILL; INSTALLATION OF A CLAY SLURRY WALL; IMPLEMENTATION OF INSTITUTIONAL CONTROLS INCLUDING WELL USE RESTRICTIONS; FILLING IN OF A WETLAND, CONSTRUCTION OF AN ALTERNATE WETLAND AREA, AND EXTENSIVE MONITORING; THE ESTIMATED CAPITAL COST FOR THIS REMEDIAL ACTION IS $9,504,796 WITH PRESENT WORTH O&M OF $862,915.

REMEDY :

THE SELECTED REMEDIAL ALTERNATIVE FOR THE WASTE DISPOSAL ENGINEERING SITE IS TO COVER THE LANDFILL WITH A VENTED CAP, TO CONTAIN CONTAMINATED GROUND WATER DISCHARGES FROM THE LANDFILL THROUGH DOWNGRADIENT GROUND WATER EXTRACTION WELLS, TO CONTAIN AN AREA WITHIN THE LANDFILL WHICH RECEIVED HAZARDOUS WASTE (HEREINAFTER REFERRED TO AS THE "PIT") WITH A SLURRY WALL AND EXTRACTION WELL SYSTEM, TO AVOID USAGE OF CONTAMINATED GROUNDWATER AND REVERSAL OF THE UPWARD GRADIENT BETWEEN THE LOWER AND UPPERS SAND AQUIFERS THROUGH INSTITUTIONAL CONTROLS TO LIMIT WELLS ON AND NEAR THE SITE, TO FILL-IN AND REPLACE A WETLAND AREA AFFECTED BY THE SITE, TO TREAT AND DISPOSE OF EXTRACTED GROUND WATER, WHICH IS EXPECTED TO BE ACCOMPLISHED BY CARBON ADSORPTION AND DISCHARGE TO COON CREEK, AND TO MONITOR THE SITE. THE SELECTED ALTERNATIVE INCLUDES THE FOLLOWING MAJOR COMPONENTS;

- LIME SLUDGE CAP MEETING RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) TECHNICAL PERFORMANCE STANDARDS.
- GROUND WATER EXTRACTION WELLS IN THE UPPER SAND AQUIFER BETWEEN COON CREEK AND THE LANDFILL.
- CLAY SLURRY WALL AROUND THE PIT WITH PUMPING INSIDE THE WALL.
- INSTITUTIONAL CONTROLS TO PROHIBIT UPPER SAND AQUIFER WELLS AT THE SITE AND JUST NORTH OF COON CREEK AND TO PROHIBIT LOWER SAND AQUIFER WELLS NEAR THE LANDFILL.

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- CARBON ADSORPTION TREATMENT OF EXTRACTED GROUND WATER (AIR STRIPPING OR A COMBINATION IS POSSIBLE BASED ON DESIGN).
- DISCHARGE OF TREATED EXTRACTED GROUND WATER TO COON CREEK.
- MONITORING, INCLUDING GEOPHYSICAL WORK AROUND THE SITE TO LOCATE HEAVIER-THAN-WATER NON-AQUEOUS PHASE LIQUID MONITORING, TO ASSURE THE EFFECTIVENESS OF THE REMEDY.

Item 20

REGION :5
SITE NAME :MASON COUNTY LANDFILL
LOCATION :PERE MARQUETTE TOWNSHIP, MI
NTIS REPORT #:EPA/ROD/R05-88/080
ROD DATE :880928
ABSTRACT :

THE MASON COUNTY LANDFILL SITE IS LOCATED THREE MILES SOUTH OF THE CITY OF LUDINGTON, MASON COUNTY, MICHIGAN. THE SITE OCCUPIES APPROXIMATELY 18 ACRES OF A PREDOMINANTLY RURAL AREA IN PERE MARQUETTE TOWNSHIP. APPROXIMATELY 10 ACRES OF THE SITE WERE USED AS A LANDFILL. LESS THAN 500 FEET FROM THE LANDFILL THERE IS A WETLAND AREA WHICH DRAINS INTO BABBIN POND, THE HEADWATERS OF IRIS CREEK. THERE ARE 14 RESIDENTIAL WELLS WITHIN A 0.5 MILE RADIUS OF THE LANDFILL. THE POPULATION WITHIN A 3-MILE RADIUS OF THE SITE IS ESTIMATED TO BE 1,112. THE MASON COUNTY DEPARTMENT OF PUBLIC WORKS (DPW) LEASED THE PROPERTY IN 1971 AND ENTERED INTO AN AGREEMENT WITH ACME DISPOSAL, INC. TO OPERATE THE SITE AS A SANITARY LANDFILL. ALTHOUGH THE MICHIGAN DEPARTMENT OF NATURAL RESOURCES (MDNR) DOCUMENTED THAT SLURRY AND SLUDGE WASTES FROM LOCAL INDUSTRIES WERE BEING DUMPED AT THE LANDFILL, THE SITE'S LICENSE WAS RENEWED ANNUALLY UNTIL IT WAS CLOSED IN AUGUST 1978 AFTER REACHING CAPACITY. PUBLIC CONCERNS OVER THE WATER QUALITY IN IRIS CREEK PROMPTED THE DPW AND MDNR TO REVIEW CLOSURE ACTIVITIES. THE SITE IS CURRENTLY OWNED BY MASON COUNTY AS RESULT OF A SETTLEMENT WITH TWO PROPERTY OWNERS WHO FILED SUIT AGAINST THE COUNTY. IN 1983, A CLAY CAP WAS INSTALLED OVER THE LANDFILL AND BERMS AND STORM DRAINS WERE CONSTRUCTED TO IMPROVE SITE DRAINAGE TWO SURFACE AERATORS WERE INSTALLED IN BABBIN POND TO FACILITATE BIODEGRADATION OF ORGANIC MATTER AND 15 GAS VENTS WERE PLACED IN THE TOP OF THE LANDFILL. THE SITE HAS BEEN SEPARATED INTO TWO OPERABLE UNITS; ONE FOR THE LANDFILL CONTENTS AND ONE FOR THE GROUND WATER. THIS SOURCE CONTROL REMEDIAL ACTION ADDRESSES THE LANDFILL CONTENTS. CONTAMINATION OF THE SHALLOW AND DEEP AQUIFER WILL BE ADDRESSED IN A SUBSEQUENT REMEDIAL ACTION. SITE INVESTIGATIONS INDICATE THAT CONTAMINATION OF SURFACE WATER, SURFACE SEDIMENT, SOIL, AND OFFSITE AIR QUALITY ARE NOT SUFFICIENT TO WARRANT REMEDIAL ACTION. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE GROUND WATER ARE VOCS INCLUDING BENZENE, PCE, TCE, AND XYLENE.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES: CONSTRUCTION OF A RCRA CAP OVER THE LANDFILL; ACCESS RESTRICTIONS; DEED RESTRICTIONS ON AND NEAR THE SITE TO PROHIBIT USE OF THE SHALLOW AQUIFER; AND GROUND WATER MONITORING. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $2,800,000, WITH PRESENT WORTH O&M COSTS OF $1,000,000 OVER 30

YEARS.
REMEDY :
THE SELECTED REMEDY IS AN OPERABLE UNIT THAT WILL ADDRESS THE LANDFILL CONTENTS PORTION OF THE SITE BY PROPERLY CAPPING THE LANDFILL. THE OPERABLE UNIT THAT WILL DIRECTLY ADDRESS THE GROUNDWATER CONTAMINATION AND OTHER OFF-SITE CONTAMINATION, OR POTENTIAL CONTAMINATION, SHALL BE ADDRESSED AFTER MORE INVESTIGATION IS DONE, INCLUDING THE ASSESSMENT OF THE EFFECTIVENESS OF THE NEW LANDFILL CAP. THE SELECTED REMEDY IS CONSIDERED COST EFFECTIVE AND IS CONSISTENT WITH THE EVENTUAL FINAL REMEDY. THE SPECIFIC COMPONENTS OF THE SELECTED REMEDY INCLUDE:

* A RCRA SUBTITLE C COMPLIANT SOIL/CLAY CAP,
* A FENCE AROUND THE SITE,
* DEED RESTRICTIONS ON AND NEAR THE SITE TO PROHIBIT USE OF THE SHALLOW AQUIFER. AND
* CONTINUED MONITORING TO APPLY TOWARDS THE GROUNDWATER OPERABLE UNIT AND TO MONITOR THE EFFECTIVENESS OF THE NEW CAP.

Item 21

REGION :3
SITE NAME :WILDCAT LANDFILL
LOCATION :DOVER, DE
NTIS REPORT #:EPA/ROD/R03-88/052
ROD DATE :880629
ABSTRACT :
THE WILDCAT LANDFILL SITE IS LOCATED 2.5 MILES SOUTHEAST OF DOVER IN KENT COUNTY, DELAWARE. THE 44-ACRE SITE IS BORDERED TO THE NORTH AND EAST BY THE ST. JONES RIVER AND ITS ASSOCIATED WETLANDS, AND TO THE SOUTH AND WEST BY RESIDENTIAL AND COMMERCIAL DEVELOPMENT. A POND, CREATED BY CONSTRUCTION OF THE LANDFILL, IS LOCATED DIRECTLY ADJACENT TO THE SITE ALONG THE NORTHWESTERN EDGE. THE POND IS THE SUBJECT OF A SECOND OPERABLE UNIT FOR THE SITE. PORTIONS OF THE SITE LIE WITHIN THE 100-YEAR FLOODPLAIN OF THE ST. JONES RIVER. THE SITE WAS OPERATED AS A PERMITTED SANITARY LANDFILL BETWEEN 1962 AND 1973, ACCEPTING BOTH MUNICIPAL AND INDUSTRIAL WASTES. INDUSTRIAL WASTES SUSPECTED TO HAVE BEEN DISPOSED OF INCLUDE LATEX WASTE AND PAINT SLUDGES. THROUGHOUT ITS IL YEARS OF OPERATION, THE FACILITY ROUTINELY VIOLATED OPERATING AND OTHER PERMITS ISSUED BY REGULATING AGENCIES. EPA BEGAN INVESTIGATING THE SITE IN 1982. TYPICAL WASTES ENCOUNTERED AT THE SITE INCLUDED MUNICIPAL REFUSE LATEX IN STRIPS AND SHEETS; SCATTERED CRUSHED, EMPTY, OR INTACT DRUMS; AND MANUFACTURED PLASTIC ITEMS. MUCH OF THE WASTE IS LOCATED ON LOW-LYING WETLAND SEDIMENTS; HOWEVER, THE AREA TO THE SOUTHWEST WAS EXCAVATED AND BACKFILLED WITH WASTES. CONSEQUENTLY, IN THAT AREA OF THE LANDFILL, WASTES ARE IN DIRECT CONTACT WITH THE SURFICIAL SAND AQUIFER. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL AND GROUND WATER ARE VOCS INCLUDING BENZENE, OTHER ORGANICS INCLUDING PCBS, AND METALS INCLUDING ARSENIC AND LEAD. THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES: GRADING, INSTALLATION OF A SOIL COVER, AND REVEGETATION OF ONSITE DIRECT CONTACT

RISK AREAS; REMOVAL AND OFFSITE DISPOSAL OF DRUMS CONTAINING WASTES BY LANDFILLING (IF NOT HAZARDOUS) OR INCINERATION (IF HAZARDOUS); REPLACEMENT OF TWO DOMESTIC WELLS ADJACENT TO THE SITE; INSTITUTIONAL CONTROLS INCLUDING WELL AND LAND USE RESTRICTIONS; AND GROUNDWATER MONITORING THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $5,400,000.
REMEDY :
THIS OPERABLE UNIT, CONSISTING OF THE LANDFILL AND CERTAIN ADJACENT AREAS EXCEPT THE POND, IS THE FIRST OF TWO FOR THE SITE. THE FIRST OPERABLE UNIT ADDRESSES THE SOURCE OF CONTAMINATION BY ELIMINATING THE EXISTING DIRECT CONTACT RISKS POSED ON THE LANDFILL. THIS FIRST OPERABLE UNIT ALSO ADDRESSES THE POTENTIAL ONSITE AND OFFSITE DIRECT CONTACT RISKS POSED BY CONTAMINATED GROUND WATERS. THE SECOND OPERABLE UNIT WILL INVOLVE CONTINUED STUDY AND REMEDIATION OF THE POND DIRECTLY ADJACENT TO THE LANDFILL.
THE MAJOR COMPONENTS OF THE SELECTED REMEDY FOR THIS OPERABLE UNIT INCLUDE:
-- INSTITUTIONAL RESTRICTIONS ON ALL WATER WELL INSTALLATIONS ON THE SITE;
-- INSTITUTIONAL RESTRICTIONS ON ALL SHALLOW AQUIFER WATER WELL INSTALLATIONS IN AREAS ADJACENT TO THE SITE WHICH HAVE BEEN IDENTIFIED AS AT SOME POTENTIAL RISK;
-- GRADING, SOIL COVER, AND REVEGETATION OF AREAS ONSITE WHERE DIRECT CONTACT RISKS HAVE BEEN IDENTIFIED. THIS WILL BE DONE IN ACCORDANCE WITH THE DELAWARE SOLID WASTE DISPOSAL REGULATION, AUGUST 1974;
-- REMOVAL AND OFFSITE DISPOSAL OF DRUMS CONTAINING WASTES AND DRUM CONTENTS EITHER BY LANDFILLING (IF NOT HAZARDOUS) OR INCINERATION AT A PERMITTED INCINERATOR (IF HAZARDOUS);
-- REPLACEMENT OF TWO DOMESTIC WELLS ADJACENT TO THE SITE WHICH HAVE BEEN IDENTIFIED AS BEING POTENTIALLY AT SOME RISK FROM THE SITE;
-- INSTITUTIONAL RESTRICTIONS ON COMMERCIAL AND RESIDENTIAL BUILDING DEVELOPMENT ON THE SITE;
-- INSTALLATION OF MONITORING WELLS ADJACENT TO TIDBURY CREEK TO MONITOR THE QUALITY OF GROUND WATER DISCHARGES;
-- GROUNDWATER MONITORING TO ENSURE THE EFFECTIVENESS OF THE REMEDIAL ACTION;

Item 22

REGION :2
SITE NAME :BURNT FLY BOG
LOCATION :MARLBORO TWP, NJ
NTIS REPORT #:EPA/ROD/R02-88/072
ROD DATE :880929
ABSTRACT :
THE BURNT FLY BOG SITE IS LOCATED IN MARLBORO TOWNSHIP, MONMOUTH COUNTY, NEW JERSEY. THE SITE IS SITUATED IN A RURAL AREA WITH AN AUTO SALVAGE YARD AND A FEW SCATTERED RESIDENCES NEARBY. THE ENTIRE BURNT FLY BOG ENCOMPASSES ABOUT 1,700 ACRES. THIS REMEDIAL ACTION ADDRESSES THE 10-ACRE AREA CONSTITUTING THE WESTERLY WETLANDS OPERABLE UNIT. THE

AREA IS AFFECTED BY CONTAMINATION FROM THE 10-ACRE PARCEL WHERE WASTE WAS ORIGINALLY DEPOSITED (UPLANDS AREA OPERABLE UNIT). THE SITE INCLUDES BOTH FLOOD PLAINS AND WETLANDS. CONTAMINATION HAS BEEN DETECTED IN THE SURFACE WATER, SURFACE SOIL, AND THE SHALLOW SURFACE SOIL AS A RESULT OF UNCONTROLLED DISCHARGES AND RUNOFF FROM THE UPLANDS AREA WASTE SOURCES. THE UPLANDS AREA INCLUDES SEVERAL ABANDONED OIL STORAGE AND TREATMENT LAGOONS CONTAINING RESIDUAL OIL SLUDGES AND AQUEOUS WASTES, CONTAMINATED WASTE PILES, AND BURIED OR EXPOSED DRUMMED WASTES. THESE ARE THE RESULTS OF ACTIVITIES AT THE SITE FROM 1950 TO 1965. THE SITE PROPERTY IS PRESENTLY OWNED BY MR. DOMINICK MANZO, WHO OPERATED PART OF THE PROPERTY AS A SANITARY LANDFILL FROM 1963 TO 1969. THE UPLANDS AREA IS CURRENTLY BEING CLEANED UP UNDER A RECORD OF DECISION SIGNED ON NOVEMBER 16, 1983. THE VOLUME OF SOIL CONTAMINATED WITH PCBS AND LEAD IS ESTIMATED TO BE 76,400 YD(3) AT THE SITE, WITH AN ADDITIONAL 5,600 YD(3) OF CONTAMINATED SEDIMENTS IN AN ADJACENT DOWNSTREAM AREA. THERE IS NO EVIDENCE OF PCB CONTAMINATION IN SURFACE WATER. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SURFACE WATER, SOIL AND SEDIMENTS ARE PCBS AND LEAD. THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES; ACCESS RESTRICTIONS; EXCAVATION OF CONTAMINATED SEDIMENTS FROM DOWNSTREAM AREA WITH DISPOSAL AT AN OFFSITE RCRA SUBTITLE C FACILITY; AS AN INTERIM REMEDY, CONTAINMENT WITHOUT CAPPING CONTAMINATED SOIL IN THE WESTERLY WETLANDS THROUGH INSTALLATION OF A SEDIMENTATION BASIN AND APPROPRIATE DIVERSION CONTROLS; AND PERFORMANCE OF TREATABILITY STUDIES ON THE MOST PROMISING INNOVATIVE TECHNOLOGY ALTERNATIVES TO PROVIDE THE FINAL REMEDY. A SUBSEQUENT ROD WILL ADDRESS THIS FINAL REMEDY FOR THE CONTAMINATED SOIL. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION USING A 20-YEAR LIFE ESTIMATE IS $6,100,000 WITH ANNUAL O&M COSTS OF $320,000.

REMEDY :

THE REMEDIAL ALTERNATIVE PRESENTED IN THIS DOCUMENT REPRESENTS AN INTERIM REMEDY FOR THE WESTERLY WETLANDS PORTION OF THE BURNT FLY BOG SITE. THIS ALTERNATIVE INCLUDES THE FOLLOWING COMPONENTS;

- EXCAVATION OF APPROXIMATELY 5,600 CUBIC YARDS OF CONTAMINATED MATERIALS FROM THE DOWNSTREAM AREA WHICH HAVE MIGRATED PAST THE WESTERLY WETLANDS;
- DISPOSAL OF THE EXCAVATED MATERIALS AT AN OFF-SITE FACILITY IN THE SAME MANNER AS THE MATERIALS BEING ADDRESSED BY THE ON-GOING REMEDIAL ACTION FOR THE UPLANDS AREA;
- CONTAINMENT WITHOUT CAPPING OF THE CONTAMINATED SOIL IN THE WESTERLY WETLANDS THROUGH THE INSTALLATION OF A SEDIMENTATION BASIN AND APPROPRIATE DIVERSION CONTROLS;
- CONSTRUCTION OF A SECURITY FENCE AND ACCESS ROAD AROUND THE WESTERLY WETLANDS; AND
- TREATABILITY STUDIES ON THE MOST PROMISING TREATMENT ALTERNATIVES FOR THE CONTAMINATED MATERIALS IN THE WESTERLY WETLANDS, THE NORTHERLY WETLANDS AND THE CONTAMINATED SOILS AREA.

Item 23

REGION :1

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SITE NAME :IRON HORSE PARK
LOCATION :BILLERICA, MA
NTIS REPORT #:EPA/ROD/R01-88/026
ROD DATE :880915
ABSTRACT :
THE IRON HORSE PARK SITE IS A 552-ACRE INDUSTRIAL COMPLEX AND RAILYARD LOCATED IN NORTH BILLERICA, MASSACHUSETTS. THE SITE INCLUDES MANUFACTURING AND RAILYARD MAINTENANCE FACILITIES, OPEN STORAGE AREAS, LANDFILLS, AND WASTEWATER LAGOONS. A LONG HISTORY OF ACTIVITIES AT THE SITE HAS RESULTED IN CONTAMINATION OF SOIL, GROUND WATER, AND SURFACE WATER. IN AUGUST 1984, EPA, UNDER ITS REMOVAL AUTHORITY, COVERED AN ONSITE ASBESTOS LANDFILL LOCATED NORTHWEST AND ADJACENT TO THE LAGOONS AREA. IN SEPTEMBER 1984, THE SITE WAS PLACED ON THE NPL. IN 1985, EPA BEGAN EVALUATIONS OF THE SITE AND CONCLUDED THAT THE SIZE AND COMPLEXITY OF THE SITE, AS WELL AS THE DISCREET NATURE OF THE CONTAMINATION, NECESSITATED DIVIDING THE SITE INTO SEVERAL SEPARATE PROBLEM AREAS. THIS ROD ADDRESSES THE CLEANUP OF THE BOSTON AND MAINE WASTEWATER LAGOONS (B&M LAGOONS) AND SURROUNDING AREA, WHICH ARE OPERATED BY BOSTON & MAINE (B&M) CORPORATION. THE B&M LAGOONS ARE A SERIES OF LAGOONS LOCATED WITHIN A 150-ACRE PARCEL OF LAND LEASED FROM THE MASSACHUSETTS BAY TRANSPORTATION AUTHORITY, WHICH USES MOST OF THE LAND TO OPERATE A PASSENGER RAIL SERVICE. THE LAGOONS HAVE BEEN RECEIVING UNTREATED INDUSTRIAL AND SANITARY WASTEWATER FROM THE MANUFACTURING AND RAILYARD MAINTENANCE FACILITIES SINCE 1915. THE LAGOON AREA CONSISTS OF THE NORTH AND SOUTH LAGOONS, CURRENTLY RECEIVING WASTEWATER, AN OVERFLOW LAGOON, ONE INACTIVE LAGOON USED UNTIL 1954, AND AN EMPTY LAGOON THAT WAS NEVER USED. THE LAGOONS CONTAIN APPROXIMATELY 7,600 YD(3) OF SOIL AND SLUDGE CONTAMINATED PRIMARILY WITH VOCS, LOW LEVELS OF PAHS, AND METALS. IN ADDITION, APPROXIMATELY 20,000 YD(3) OF SOIL AND SLUDGE DREDGED FROM THE LAGOON BOTTOMS AND DISPOSED IN PILES ALONG THE LAGOON BANKS ARE CONTAMINATED WITH LOW LEVELS OF ORGANICS AND METALS. THE PILES OF DREDGED MATERIAL AND THE SLUDGE IN THE LAGOONS ARE CONSIDERED TO NOT CONTRIBUTE SIGNIFICANTLY TO GROUND WATER CONTAMINATION. THIS CONCLUSION IS BASED ON THE RESULTS OF THE TCLP TEST WHICH INDICATES THAT THESE MATERIALS DO NOT LEACH CONTAMINANTS IN SIGNIFICANT CONCENTRATIONS. ADDITIONALLY, THE CONTAMINANTS FOUND IN THESE MATERIALS ARE GENERALLY NOT FOUND IN THE GROUND WATER. B&M HAS BEEN ORDERED TO STOP DISCHARGING WASTEWATER TO THE B&M LAGOONS BY THE END OF 1988, AND PLANS TO TIE-IN TO THE TOWN OF BILLERICA'S SEWER SYSTEM. SUBSEQUENT RODS WILL ADDRESS OTHER PORTIONS OF THE SITE INCLUDING A LANDFILL AND SITE-WIDE GROUND WATER. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL, SLUDGE, AND DEBRIS ARE VOCS, ORGANICS INCLUDING PAHS, AND METALS INCLUDING ARSENIC AND LEAD.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES; EXCAVATION AND ONSITE BIODEGRADATION OF CONTAMINATED SOIL AND SLUDGE WITH RESIDUAL DISPOSAL TO THE LAGOON AREA FOLLOWED BY COVERING WITH A CLEAN SOIL COVER AND REVEGETATION; AND DECONTAMINATION OF THE LAGOON SYSTEM PIPING AND PUMPS. THE ESTIMATED CAPITAL COST FOR THIS REMEDIAL ACTION IS $2,273,000 WITH PRESENT WORTH O&M OF $47,000.
REMEDY :

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SCOPE AND ROLE OF OPERABLE UNITS IN THE RESPONSE ACTION. THE RESPONSE ACTION FOR THE B&M LAGOONS IS BEING CONDUCTED AS AN OPERABLE UNIT FOR THE CLEANUP OF THE CONTAMINATED SOIL AND SLUDGES FOUND IN AND AROUND THE LAGOONS. IT IS A SOURCE CONTROL REMEDY THAT IS CONSISTENT WITH ACHIEVING A PERMANENT REMEDY FOR THE SITE. THE REMEDIATION OF GROUNDWATER IS NOT PART OF THIS RESPONSE ACTION; HOWEVER, THE CLEANUP OF THE SOIL AND SLUDGES WILL BE CONSISTENT WITH FUTURE GROUNDWATER REMEDIES AND WILL ENSURE THAT RELEASES OF HAZARDOUS SUBSTANCES FROM THE SOIL AND SLUDGES INTO GROUNDWATER ARE MITIGATED. AN OPERABLE UNIT IS A DISCRETE PORTION OF AN ENTIRE RESPONSE, THAT DECREASES A RELEASE, THREAT OF RELEASE, OR PATHWAY OF EXPOSURE. COMPONENTS OF THE SELECTED REMEDY THE SELECTED REMEDY IS A SOURCE CONTROL RESPONSE ACTION FOR THE B&M LAGOONS. IT INCLUDES; TREATING THE CONTAMINATED SOIL AND SLUDGE FROM THE LAGOONS BY BIOREMEDIATION; RETURNING THE TREATED MATERIAL TO THE LAGOON AREA, COVERING IT WITH CLEAN SOIL AND ESTABLISHING A VEGETATIVE COVER; AND DECONTAMINATING THE LAGOON SYSTEM'S PIPING AND PUMPS. THE REMEDY ASSUMES THAT THE DISCHARGE TO THE LAGOONS WILL CEASE.

Item 24

REGION :5
SITE NAME :KUMMER SANITARY LANDFILL
LOCATION :NORTHERN TWP, MN
NTIS REPORT #:EPA/ROD/R05-88/082
ROD DATE :880930
ABSTRACT :
THE KUMMER SANITARY LANDFILL IS A 40-ACRE SITE LOCATED IN NORTHERN TOWNSHIP, BELTRAMI COUNTY, MINNESOTA. THE SITE CONSISTS OF A 35-ACRE LANDFILL AND THE KUMMER RESIDENCE LOCATED IN THE EXTREME SOUTHEAST CORNER OF THE PROPERTY. TO THE NORTH AND WEST OF THE SITE, THE LAND IS SPARSELY SETTLED WITH FARM RESIDENCES. A LARGE RESIDENTIAL COMMUNITY LIES ABOUT 1,000 FEET TO THE EAST AND WEST, AND THE CITY OF BEMIDGE IS LOCATED 0.5 MILE SOUTH OF THE SITE. THE CITY USES GROUND WATER FOR ITS DRINKING WATER; ITS WELLS ARE 0.25 MILE WEST OF THE SITE. THERE ARE NUMEROUS WETLANDS AND LAKES WITHIN THE AREA OF THE SITE. BETWEEN 1971 AND 1983 THE SITE OPERATED AS A SANITARY LANDFILL, ACCEPTING MIXED MUNICIPAL WASTE. LANDFILL OPERATIONS CONSISTED OF EXCAVATING TRENCHES, FILLING THE TRENCHES WITH WASTE MATERIALS, AND COVERING THE FILL WITH ONSITE SAND AND GRAVEL DEPOSITS. THE TRENCHES MAY HAVE BEEN EXCAVATED TO THE WATER TABLE AND THE WASTE PLACED IN DIRECT CONTACT WITH GROUND WATER. BEGINNING IN 1974, DEMOLITION DEBRIS CONSISTING OF FLY ASH AND SAWDUST WERE DISPOSED OF ONSITE. IN 1982 AND 1983 THE MINNESOTA POLLUTION CONTROL AGENCY SAMPLED GROUND WATER FROM ONSITE MONITORING WELLS AND DISCOVERED 19 VOCS INCLUDING TCE, PCE, AND BENZENE. IN 1984, VOCS WERE ALSO DISCOVERED IN OFFSITE SHALLOW RESIDENTIAL WELLS DOWNGRADIENT OF THE SITE; CONSEQUENTLY, IN 1985 THE SITE WAS ORDERED CLOSED. IN JUNE 1985 A ROD WAS SIGNED TO PROVIDE AN ALTERNATE WATER SUPPLY TO APPROXIMATELY 244 HOMES AFFECTED BY CONTAMINATED GROUND WATER. ALTHOUGH THERE IS NO DOCUMENTATION OF HAZARDOUS WASTE DISPOSAL AT THE SITE, IT IS BELIEVED THAT SMALL QUANTITIES OF WASTES SUCH AS PAINT

THINNER, SOLVENTS, AND PESTICIDES WERE INCLUDED IN MUNICIPAL WASTES.
THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING GROUND WATER AND SOIL ARE VOCS SUCH AS TCE, PCE AND BENZENE.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES: SITE GRADING AND CONSOLIDATION OF SOIL AND OTHER WASTE MATERIAL; PLACEMENT OF A SLOPING FOUNDATION LAYER OF NATURAL SOIL FILL; CAPPING WITH A COVER SYSTEM CONSISTING OF A GAS CONTROL LAYER, A BARRIER LAYER OF LOW PERMEABILITY MATERIAL (CLAY OR FLEXIBLE SYNTHETIC MEMBRANE), AND A DRAINAGE LAYER WITH PLACEMENT OF COVER SOIL AND A VEGETATIVE LAYER; ACCESS AND DEED RESTRICTIONS LIMITING FUTURE SITE USE; AND GROUNDWATER AND LANDFILL GAS MONITORING. THE ESTIMATED CAPITAL COST OF THE SELECTED REMEDY IS $7,400,000 TO $12,500 FOR THE CLAY CAP AND $6,900,000 TO $11,200,000 FOR THE SYNTHETIC MEMBRANE, WITH ANNUAL O&M COSTS OF $35,000 AND $33,000, RESPECTIVELY.

REMEDY :

THE SELECTED REMEDIAL ALTERNATIVE FOR THE KUMMER SANITARY LANDFILL SITE IS A SOURCE CONTROL OPERABLE UNIT TO COVER THE LANDFILL WITH A LOW PERMEABILITY CAP AND TO UNDERTAKE OTHER ACTIONS CONSISTENT WITH STATE SANITARY LANDFILL CLOSURE REQUIREMENTS. THE MAJOR COMPONENTS OF THE SELECTED REMEDIAL ALTERNATIVE ARE;

* SITE GRADING AND CONSOLIDATION OF WASTE MATERIAL.
* PLACEMENT OF A SLOPING FOUNDATION LAYER OF 1-15 FEET OF EXISTING AND PROPOSED NATURAL SOIL FILL.
* CAPPING WITH A COVER SYSTEM CONSISTING OF A 0.5 FEET GAS CONTROL LAYER, A 2.0 FOOT BARRIER LAYER OF LOW PERMEABLE MATERIAL (CLAY) OR A 0.30 MILLIMETER FLEXIBLE MEMBRANE, AND A 1.0 FOOT DRAINAGE LAYER.
* A 1.5 FOOT TOPSOIL, COVER SOIL, AND VEGETATION LAYER TO PROVIDE PROTECTION OF THE DRAINAGE AND BARRIER LAYERS.
* SITE DEED RESTRICTIONS LIMITING FUTURE USE OF SITE.
* FENCING TO RESTRICT ACCESS TO THE SITE.
* LONG-TERM OPERATION AND MAINTENANCE TO PROVIDE INSPECTIONS AND REPAIRS TO THE LANDFILL CAP.

THE FOLLOWING COMPONENT WILL BE EVALUATED DURING THE REMEDIAL DESIGN;

* DETERMINATION WHETHER A LOW PERMEABILITY MATERIAL (CLAY) OR A FLEXIBLE, SYNTHETIC MEMBRANE LINER IS BEST SUITED FOR USE AS THE BARRIER LAYER.

THIS ACTION WILL REQUIRE OPERATION AND MAINTENANCE ACTIVITIES TO ENSURE CONTINUED EFFECTIVENESS OF THE REMEDIAL MEASURES.
THE ACTION BEING TAKEN IS CONSISTENT WITH SECTION 121 OF CERCLA AS AMENDED BY SARA, 42, U.S.C. §9621. THE STATE OF MINNESOTA HAS BEEN CONSULTED AND CONCURS WITH THE SELECTED REMEDY.

Item 25

REGION :5
SITE NAME :OAK GROVE LANDFILL
LOCATION :OAK GROVE TWP, MN
NTIS REPORT #:EPA/ROD/R05-88/074
ROD DATE :880930

ABSTRACTS FOR SANITARY LANDFILLS
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ABSTRACT :
THE OAK GROVE SANITARY LANDFILL COVERS 45 TO 50 ACRES IN OAK GROVE TOWNSHIP, ANOKA COUNTY, MINNESOTA, APPROXIMATELY 38 MILES NORTHWEST OF ST. PAUL. THERE ARE 249 PEOPLE THAT LIVE WITHIN 1 MILE OF THE SITE AND 6,786 RESIDE WITHIN 4 MILES. THE MAJORITY OF THESE RESIDENTS DEPEND ON WATER FROM WELLS DRAWN PRIMARILY FROM THE LOWER AQUIFER, OR SURFACE WATER SOURCES. SURFACE RUNOFF FROM THE LANDFILL EMPTIES INTO A WETLAND TO THE SOUTH. A CREEK FLOWS THROUGH THIS WETLAND, DISCHARGING TO RUM RIVER TWO TO THREE MILES SOUTHWEST OF THE SITE. THE LANDFILL RECEIVED 200,000 TO 300,000 CUBIC YARDS OF WASTE PER YEAR FROM 1976 UNTIL IT REACHED ITS PERMITTED CAPACITY IN LATE 1983. MOST OF THIS WASTE CONSISTS OF HOUSEHOLD TRASH AND GARBAGE. IN ADDITION, WASTE CONSISTING OF OIL SLUDGE FROM AN OIL RECYCLING PROCESS, PAINT AND SOLVENT WASTES, FOUNDRY WASTES, METAL SLUDGES, ORGANIC COMPOUNDS FROM PESTICIDE MANUFACTURING, CUTTING OILS AND LUBRICANTS, CLEANING SOLVENTS, AND INKS ARE REPORTED TO HAVE BEEN BURIED NEAR THE CENTER OF THE LANDFILL BUT THEIR EXACT LOCATION IS UNKNOWN. MINNESOTA POLLUTION CONTROL AGENCY (MPCA) AND ANOKA COUNTY RECORDS INDICATE A NUMBER OF VIOLATIONS AND OPERATIONAL PROBLEMS THROUGHOUT THE ACTIVE HISTORY OF THE SITE. MPCA DISCOVERED A GROUND WATER CONTAMINATION PROBLEM FROM MONITORING WELL SAMPLES OBTAINED AT THE SITE IN 1984. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING GROUND WATER AND SURFACE WATER ARE VOCS INCLUDING ETHYL BENZENE, TOLUENE AND XYLENES.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES: INSTALLATION OF A SECURITY FENCE; CAPPING WITH A FINAL COVER SYSTEM CONSISTING OF A GAS CONTROL LAYER, A BARRIER LAYER OF LOW PERMEABLE MATERIAL OR A FLEXIBLE MEMBRANE AND A DRAINAGE LAYER; TOPSOIL COVER AND VEGETATION; DEED RESTRICTIONS; CONSIDERATION OF TREATMENT OPTIONS FOR AIR EMISSIONS FROM GAS VENTS AFTER CONSTRUCTION OF THE FINAL COVER; CONSIDERATION DURING DESIGN OF THE NEED FOR EXTRA PROTECTION FOR FROST DAMAGE WITHOUT SIGNIFICANTLY INCREASING COST OR LIKELIHOOD OF FAILURE; AND AIR AND GROUND WATER MONITORING. THE SECOND REMEDIAL ACTION WILL ADDRESS THE GROUND WATER CONTAMINATION AND POSSIBLE REMEDIATION OF THE DOWNGRADIENT PLUME. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $6,300,000 TO $11,100,000 IF A CLAY BARRIER IS INSTALLED, OR $5,500,000 TO $9,300,000 IF A SYNTHETIC MEMBRANE BARRIER IS INSTALLED, WITH ANNUAL O&M OF $42,000 OR $40,000.

REMEDY :
THIS OPERABLE UNIT IS THE FIRST OF TWO OPERABLE UNITS FOR THE SITE. THE FIRST OPERABLE UNIT ADDRESSES THE SOURCE OF THE CONTAMINATION BY CONTAINING THE ON-SITE WASTES AND CONTAMINATED SOIL. THE FUNCTION OF THIS OPERABLE UNIT IS TO PROVIDE A FINAL COVER FOR THE OAK GROVE SANITARY LANDFILL WHICH WILL PREVENT OR MINIMIZE GROUND WATER CONTAMINATION AND RISKS ASSOCIATED WITH EXPOSURE TO THE CONTAMINATED MATERIALS. THE REMEDY DOES NOT FULLY ADDRESS THE PRINCIPAL THREATS AT THE SITE BECAUSE IT IS NOT APPROPRIATE TO ADDRESS THE GROUND WATER CONTAMINATION AT THIS TIME. THE SECOND OPERABLE UNIT WILL ADDRESS THE GROUND WATER CONTAMINATION AND POSSIBLE REMEDIATION OF THE DOWNGRADIENT PLUME.

THE MAJOR COMPONENTS OF THE SELECTED REMEDY INCLUDE:

* CAPPING WITH A FINAL COVER SYSTEM CONSISTING OF A GAS CONTROL LAYER, A BARRIER LAYER OF LOW PERMEABLE MATERIAL OR A FLEXIBLE MEMBRANE, AND A DRAINAGE LAYER;
* TOPSOIL COVER AND VEGETATION;
* SITE DEED RESTRICTIONS LIMITING FURTHER USE OF THE SITE;
* TREATMENT OPTIONS FOR AIR EMISSIONS FROM GAS VENTS WILL BE CONSIDERED AFTER CONSTRUCTION OF THE FINAL COVER;
* CONSIDERATION DURING DESIGN, OF THE NEED FOR EXTRA PROTECTION FROM FROST DAMAGE WITHOUT SIGNIFICANTLY INCREASING COST OR LIKELIHOOD OF FAILURE, AND
* AIR AND GROUND WATER MONITORING TO ENSURE THE EFFECTIVENESS OF THE REMEDIAL ACTION WILL BE IMPLEMENT AFTER CONSTRUCTION OF THE FINAL COVER.

THE BARRIER LAYER COMPONENT OF THE FINAL COVER SYSTEM WILL BE EVALUATED DURING THE REMEDIAL DESIGN TO DETERMINE ??ETHER LOW PERMEABILITY MATERIAL (CLAY) OR A FLEXIBLE SYNTHETIC LINER IS BEST SUITED FOR USE. THIS ACTION WILL REQUIRE OPERATION AND MAINTENANCE ACTIVITIES TO ENSURE CONTINUED EFFECTIVENESS OF THE REMEDIAL ALTERNATIVE. THE ACTION' BEING TAKEN IS CONSISTENT WITH SECTION 121 OF CERCLA AS AMENDED BY SARA, 42 U.S.C. # 9621.

Item 26

REGION :4
SITE NAME :CELANESE FIBERS OPERATIONS SITE
LOCATION :SHELBY, NC
NTIS REPORT #:EPA/ROD/R04-88/038
ROD DATE :880323
ABSTRACT :
THE 450-ACRE CELANESE FIBER OPERATIONS (CFO) SITE IS OCCUPIED BY A POLYESTER RAW-MATERIAL PRODUCTION FACILITY, AND IS LOCATED IN CLEVELAND COUNTY, ONE MILE NORTH OF EARL, NORTH CAROLINA. THE PLANT FACILITIES CONSIST OF THE PLANT PRODUCTION AREA, WASTEWATER TREATMENT AREA, FORMER WASTE DISPOSAL AREAS, LAND FARM AREA, AND RECREATION AND TREE FARM AREAS SOUTH OF THE MAIN PLANT. THE PLANT BEGAN OPERATIONS IN 1960 AS FIBERS INDUSTRIES, INC. AND MANUFACTURED POLYESTER POLYMER CHIP AND FILAMENT YARN USING THE CHEMICALS DIMETHYL TEREPHTHALATE AND ETHYLENE GLYCOL. CELANESE CORPORATION BOUGHT THE FACILITY IN 1983. THE CFO WASTE TREATMENT PLANT WAS CONSTRUCTED IN PHASES CONCURRENT WITH THE MANUFACTURING PLANT. THIS RESULTED IN THE DISPOSAL OF CHEMICAL WASTES DIRECTLY INTO A DRAINAGE DITCH DURING THE EARLY YEARS OF OPERATION PRIOR TO COMPLETION OF THE WASTE TREATMENT PLANT. TREATED EFFLUENT HAS BEEN DISCHARGED TO BUFFALO CREEK SINCE THE MID-1960S, WHEN CFO COMPLETED CONSTRUCTION OF THE TREATMENT PLANT. IN ADDITION TO THE DISCHARGE FROM THE WASTEWATER TREATMENT PLANT, CFO ALSO DISCHARGES ALUM-TREATED BANDCASTER WATER DIRECTLY TO BUFFALO CREEK. SEVERAL AREAS AROUND THE PLANT HAVE BEEN USED FOR WASTE DISPOSAL, INCLUDING OLD BURNING PITS FOR NORMAL PLANT WASTES (POLYESTER AND TRASH), A GLYCOL RECOVERY UNIT SLUDGE BURIAL AREA, AND A FORMER DRUM STORAGE AND STAGING AREA (DRUMS CONTAINED SOLUTIONS THAT FAILED TO POLYMERIZE) EXCAVATED AND BACKFILLED IN THE

MID-1960S, AND TWO SOAK-AWAY PONDS FORMERLY CONTAINING TREATED SANITARY SEWAGE. IN ADDITION, 4 AREAS OF BURIED WASTE ARE LOCATED TO THE NORTH AND OUTSIDE THE MAIN PLANT PERIMETER FENCE: A POLYMER AND FIBER LANDFILL, A CONSTRUCTION DEBRIS LANDFILL, A 21-ACRE SLUDGE DISPOSAL AREA, AND A DRUM STORAGE AREA WHICH TEMPORARILY STORED 2,000 TO 3,000 DRUMS OF WASTE CHEMICALS AND SOLVENTS, INCLUDING LAB PACKS, FROM 1970 TO 1978. THE DRUMS WERE REMOVED AND DISPOSED OF OFFSITE BY 1978. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE GROUND WATER INCLUDE: VOCS INCLUDING BENZENE AND PCE, ORGANICS INCLUDING PHENOLS, AND METALS INCLUDING CHROMIUM.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES: GROUND WATER PUMP AND TREATMENT USING AIR STRIPPING, BIOLOGICAL TREATMENT, AND CARBON ADSORPTION (IF NECESSARY), FOLLOWED BY DISCHARGE TO THE ONSITE WASTEWATER TREATMENT PLANT. IF THE TREATMENT SYSTEM EFFLUENT CONTAINS METALS, SUCH AS CHROMIUM, ABOVE ALLOWABLE DISCHARGE LEVELS, THE EFFLUENT WILL BE TREATED USING CHEMICAL PRECIPITATION. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $2,032,000 WITH ESTIMATED PRESENT WORTH O&M OF $1,069,230.

REMEDY :

THIS IS OPERABLE UNIT ONE OF THE REMEDIAL ACTIONS TO BE UNDERTAKEN AT THE SITE. IT IS A CONTROL MEASURE TO MITIGATE THE THREAT OF OFF-SITE MIGRATION (VIA GROUNDWATER) OF CONTAMINATION BY ORGANIC COMPOUNDS. THE FEASIBILITY STUDY (FS) FOR THE CONTAMINANT SOURCE CONTROL IS IN PROGRESS.

- GROUNDWATER CONTAMINATION
  * INSTALLATION OF EXTRACTION WELLS INTO BEDROCK AT THE PERIMETER OF THE SITE.
  * INSTALLATION OF SHALLOW EXTRACTION WELLS DIRECTLY DOWNGRADIENT OF SOURCE AREA.
  * PUMPING OF CONTAMINATED WATER FROM INTERIOR WELLS TO COMMON HOLDING TANK THEN TO THE AIR STRIPPING TOWER.
  * ALL CONTAMINATED WATER TRANSPORTED FROM THE AIR STRIPPING TOWER TO THE BIOLOGICAL TREATMENT SYSTEM.
  * WATER REQUIRING ADDITIONAL TREATMENT PUMPED TO CARBON ADSORPTION FILTRATION UNIT.
  * ALL WATER IS TO BE DISCHARGED TO THE EXISTING WASTEWATER TREATMENT SYSTEM AS LONG AS CURRENT NPDES PERMIT LIMITATIONS ARE NOT VIOLATED.

Item 27

REGION :10
SITE NAME :COMMENCEMENT BAY - SOUTH TACOMA CHANNEL
LOCATION :TACOMA, WA
NTIS REPORT #:EPA/ROD/R10-88/016
ROD DATE :880331
ABSTRACT :

THE COMMENCEMENT BAY/TACOMA SITE IS A 190-ACRE INDUSTRIAL/MUNICIPAL LANDFILL LOCATED IN PIERCE COUNTY, TACOMA, WASHINGTON. THE LANDFILL IS OPERATED BY THE CITY OF TACOMA REFUSE UTILITY AND IS SURROUNDED

PRIMARILY BY RESIDENTIAL DEVELOPMENT AND OPEN LAND, WITH SOME COMMERCIAL AND INDUSTRIAL DEVELOPMENT. SEVERAL UTILITIES (I.E., SEWER, WATER, AND STORM) PASS THROUGH THE SITE. AN AQUIFER BENEATH THE SITE PROVIDES DRINKING WATER TO THE TOWN OF FIRCREST AND THE CITY OF TACOMA, BOTH OF WHICH HAVE WELLS NEAR THE LANDFILL. THE AQUIFER IS ALSO USED BY PRIVATE INDIVIDUALS FOR THEIR DOMESTIC WATER SUPPLY. GROUND WATER FLOWS PREDOMINANTLY TO THE SOUTHWEST TOWARD LEACH CREEK, WHICH LIES APPROXIMATELY 0.25 MILE WEST OF THE LANDFILL. CONSEQUENTLY, WETLANDS DOWNSTREAM OF THE LANDFILL COULD POTENTIALLY BE EXPOSED TO CONTAMINANTS IN THE SURFACE WATER AND GROUND WATER. THE TACOMA LANDFILL BEGAN OPERATIONS IN 1960, RECEIVING ONLY NONHAZARDOUS WASTES INCLUDING ASSORTED MUNICIPAL AND INDUSTRIAL WASTES, CONSTRUCTION AND DEMOLITION WASTES, AND BULK WASTE. TO DATE, ABOUT 4 MILLION TONS OF REFUSE HAVE BEEN DEPOSITED AT THE LANDFILL TO DEPTHS OF 20 TO 80 FEET. ALTHOUGH THE LANDFILL DOES NOT ACCEPT HAZARDOUS WASTES FOR DISPOSAL, IT DID RECEIVE WASTES IN THE 1960S AND 1970S THAT HAVE SINCE BEEN DESIGNATED AS HAZARDOUS SUBSTANCES. IN 1983, INVESTIGATIONS BY EPA REVEALED THE PRESENCE OF HAZARDOUS COMPOUNDS IN THE GROUND WATER AND SOIL NEAR THE LANDFILL.

SUBSEQUENT INVESTIGATIONS INDICATED THAT THE GROUND WATER IS CONTAMINATED WITH VOCS. IN RESPONSE, THE CITY OF TACOMA CONNECTED AFFECTED RESIDENCES TO THE PUBLIC WATER SYSTEM. IN 1986, ACCUMULATION OF LANDFILL GAS IN A UTILITY VAULT ADJACENT TO THE LANDFILL RESULTED IN A MINOR EXPLOSION. A FIELD SURVEY WAS INITIATED TO EVALUATE THE EXTENT OF OFFSITE GAS MIGRATION, AND BASED ON THIS SURVEY A GAS EXTRACTION SYSTEM WAS CONSTRUCTED TO EXTRACT, COLLECT, AND COMBUST THE GAS. GAS SAMPLES COLLECTED AT THE LANDFILL REVEALED HIGH LEVELS OF VOCS. THE PRIMARY CONTAMINANTS AFFECTING THE GROUND WATER AND SURFACE WATER ARE VOCS INCLUDING BENZENE, TOLUENE, AND XYLENES.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES; CONSTRUCTION OF A CAP ON THE LANDFILL WITH RUNOFF DIRECTED TO APPROPRIATE STORM OR SANITARY SEWERS, AND INSTALLATION OF A GAS EXTRACTION SYSTEM AND GAS PROBES TO MONITOR METHANE GAS PRODUCTION; INSTALLATION OF A GROUND WATER PUMP AND TREATMENT SYSTEM WITH DISCHARGE OF TREATED WATER TO A LOCAL CREEK OR THE POTW AND ALTERNATE WATER SUPPLY IF NEEDED; AND GROUND WATER AND SURFACE WATER MONITORING. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS BETWEEN $21,015,000 AND $23,418,000. THE ESTIMATED O&M COSTS WERE NOT PROVIDED.

REMEDY :

THIS RECORD OF DECISION (ROD) ADDRESSES SOURCE CONTROL OF ON-SITE CONTAMINANTS THROUGH CAPPING OF THE LANDFILL AND EXTRACTION OF METHANE GAS. MANAGEMENT OF MIGRATION FOR OFF-SITE CONTAMINANTS WILL BE THROUGH A GROUNDWATER EXTRACTION AND TREATMENT SYSTEM.

THE REMEDIAL ACTION IS DESIGNED TO:

* REDUCE THE PRODUCTION OF LEACHATE BY PLACING CONSTRAINTS ON FURTHER SITE OPERATIONS AND BY CAPPING THE LANDFILL.
* ELIMINATE OFF-SITE GAS MIGRATION THROUGH THE GAS EXTRACTION SYSTEM.
* PREVENT FURTHER MIGRATION OF THE CONTAMINATED PLUME VIA THE GROUNDWATER EXTRACTION-TREATMENT SYSTEM.

- * FURTHER PROTECT PUBLIC HEALTH AND THE ENVIRONMENT VIA MONITORING OF GROUNDWATER, SURFACE WATER, GAS PROBES, AND AIR EMISSIONS.
- * PROVIDE AN ALTERNATE WATER SUPPLY (TACOMA MUNICIPAL WATER) TO ANY RESIDENTS DEPRIVED OF THEIR DOMESTIC SUPPLY DUE TO DEMONSTRATED CONTAMINATION FROM THE LANDFILL OR DUE TO THE ACTION OF THE EXTRACTION-TREATMENT SYSTEM.

Item 28

REGION :3
SITE NAME :WILDCAT LANDFILL
LOCATION :DOVER, DE
NTIS REPORT #:EPA/ROD/R03-89/065
ROD DATE :881130
ABSTRACT :

THE WILDCAT LANDFILL IS LOCATED 2.5 MILES SOUTHEAST OF DOVER, IN KENT COUNTY, DELAWARE. A 2.7-ACRE POND, FORMED BY THE LANDFILL BLOCKING NATURAL DRAINAGE FROM UPLAND AREAS, IS LOCATED ALONG THE NORTHWESTERN BORDER OF THE SITE. THE POND AND THE LANDFILL ARE LOCATED ALONG THE WEST BANK OF THE ST. JONES RIVER AND ARE BORDERED TO THE NORTH AND EAST BY THE RIVER AND ASSOCIATED MARSHLANDS, AND TO THE SOUTH AND WEST BY RESIDENTIAL AND COMMERCIAL DEVELOPMENT. PORTIONS OF THE SITE LIE WITHIN THE 100-YEAR FLOODPLAIN OF THE ST. JONES RIVER. THE LANDFILL WAS ADDRESSED IN THE FIRST OPERABLE UNIT RECORD OF DECISION SIGNED IN JUNE 1988. THIS OPERABLE UNIT DETAILS THE SELECTION OF A REMEDIAL ALTERNATIVE WHICH ADDRESSES THE LARGELY ENVIRONMENTAL CONCERNS THE LANDFILL POSES TO THE POND AND ASSOCIATED BIOTA. THE LANDFILL WAS OPERATED AS A STATE-PERMITTED SANITARY LANDFILL BETWEEN 1962 AND 1973, ACCEPTING BOTH MUNICIPAL AND INDUSTRIAL WASTES. INDUSTRIAL WASTES SUSPECTED TO HAVE BEEN DISPOSED OF ONSITE INCLUDE LATEX WASTE AND PAINT SLUDGES. DURING ITS 11 YEARS OF OPERATION, THE FACILITY ROUTINELY VIOLATED OPERATING AND OTHER PERMITS ISSUED BY THE REGULATORY AGENCIES. IN AUGUST 1973 THE FACILITY WAS ORDERED CLOSED BY THE STATE AND THE SITE OWNERS WERE REQUIRED TO COVER THE SITE WITH SOIL AND VEGETATION. EPA BEGAN INVESTIGATING THE SITE IN 1982. SURFACE WATER AND SEDIMENTS IN THE POND WERE CONTAMINATED BY INORGANIC CONSTITUENTS LEACHING FROM THE LANDFILL. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SEDIMENTS AND SURFACE WATER IN THE POND ARE METALS INCLUDING ARSENIC, CHROMIUM AND LEAD.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES DRAINING, FILLING, AND REVEGETATING THE POND AREA CONSISTENT WITH THE LANDFILL COVER SELECTED IN THE PREVIOUS ROD; CONSTRUCTING A NEW POND ELSEWHERE ON THE SITE; IMPLEMENTING INSTITUTIONAL CONTROLS FOR LAND USE RESTRICTIONS; AND GROUND WATER MONITORING UPGRADIENT OF THE NEW POND. POND WATER WILL BE DISCHARGED TO ST. JONES RIVER, TO THE NORTH OF THE SITE.

REMEDY :

THIS OPERABLE UNIT CONSISTS OF THE POND LOCATED ADJACENT TO THE LANDFILL AND IT IS THE SECOND OF TWO OPERABLE UNITS FOR THE SITE. THE

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FIRST OPERABLE UNIT RECORD OF DECISION (ROD) WAS ISSUED ON JUNE 29, 1988. IT ADDRESSED THE SOURCE OF CONTAMINATION BYELIMINATING THE EXISTING DIRECT CONTACT RISKS POSED BY THE LANDFILL CONTENTS. THE FIRST ROD ALSO ADDRESSED THE LEACHATE SEEPS ADJACENT TO THE POND AS PART OF THE SELECTED REMEDY. THE REMEDY SELECTION FOR THE POND IS BASED UPON THE REMEDY SELECTED FOR THE LANDFILL AND UPON AN ADDITIONAL STUDY BY THE U.S. FISH AND WILDLIFE SERVICE.
THE MAJOR COMPONENTS OF THE SELECTED POND REMEDY INCLUDE:
* DRAINING AND COVERING THE POND WITH SOIL. THIS WORK WILL BE DONE CONCURRENTLY WITH COVERING THE LEACHATE SEEPS AS DETAILED IN THE JUNE 29, 1988, ROD;
* TESTING AND DISCHARGE OF POND WATER TO THE ST. JONES RIVER;
* SLOPE AND VEGETATIVE STABILIZATION OF THE POND FILL SURFACE;
* DEVELOPMENT OF A NEW POND AND ASSOCIATED HABITAT IN ACCORDANCE WITH THE DESIGN SPECIFICATIONS AND SUCCESSSTANDARDS DEVELOPED BY THE APPROPRIATE STATE AND FEDERAL NATURAL RESOURCE AGENCY REPRESENTATIVES. THIS REPLACEMENT POND AND HABITAT WOULD BE DESIGNED TO HAVE HABITAT VALUES EQUAL TO OR GREATER THAN THE POND THAT IS TO BE COVERED;
* CONSTRUCTION OF A MONITORING WELL UPGRADIENT OF THE NEW POND CONSISTENT WITH THE MONITOR WELLS REQUIRED IN THE JUNE 29, 1988, ROD;
* MONITORING OF THE GROUND WATER AT THE NEWLY CONSTRUCTED WELL. DETECTION OF CONTAMINANTS IN THIS WELL WOULD TRIGGER AN ASSESSMENT OF THE SITUATION TO DETERMINE IF ANY ACTIONS ARE NECESSARY TO PROTECT THE REPLACEMENT POND AND HABITAT; AND
* DEVELOPMENT OF ADMINISTRATIVE RESTRICTIONS AT AND ADJACENT TO THE NEWLY CREATED POND AND AT THE AREA OF THE FILLED POND.

Item 29

REGION :3
SITE NAME :HEBELKA AUTO SALVAGE YARD
LOCATION :UPPER MACUNGIE TWP, PA
NTIS REPORT #:EPA/ROD/R03-89/069
ROD DATE :890331
ABSTRACT :
THE 20-ACRE HEBELKA SITE IS LOCATED IN A RURAL AREA OF THE WEISENBURG TOWNSHIP IN LEHIGH COUNTY, PENNSYLVANIA. THE SITE IS BORDERED PRIMARILY BY AGRICULTURAL FIELDS; HOWEVER, THREE RESIDENCES ARE LOCATED ON OR IMMEDIATELY ADJACENT TO THE SITE. FROM 1958 TO 1979, THE PROPERTY WAS USED AS AN AUTOMOBILE JUNK YARD WITH INTERMITTENT PERIODS OF ACTIVITY INVOLVING SALVAGE OPERATIONS. DEBRIS INCLUDING TWO LARGE PILES OF BATTERY CASINGS, EMPTY DRUMS, JUNK CARS, AND SCRAP METAL WERE ACCUMULATED ON SITE. A SITE INSPECTION IN DECEMBER 1985 REVEALED LEAD IN SOIL DOWNGRADIENT FROM THE BATTERY PILES, AND CHROMIUM IN DOWNGRADIENT SEDIMENTS. LEAD CONCENTRATIONS WERE HIGHEST IN SURFACE SOIL SAMPLES (LESS THAN 3FT) RANGING FROM 200-65,000 MG/KG. THIS ROD ADDRESSES SOURCE CONTROL; A SECOND OPERABLE UNIT WILL ADDRESS MIGRATION PATHWAYS SUCH AS DOWNGRADIENT SEDIMENTS AND GROUND WATER. THE PRIMARY

CONTAMINANT OF CONCERN AT THE SITE IS LEAD.
THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES EXCAVATION AND ONSITE FIXATION OF 5,000 YDS OF SOIL, FOLLOWED BY OFFSITE DISPOSAL OF TREATED SOIL AT A SANITARY LANDFILL; EXCAVATION AND RECYCLING OF 1,000 YDS OF BATTERY CASINGS; AND SOIL BACKFILLING AND REVEGETATION. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION RANGES FROM $6,073,436 TO $6,884,652; THE GREATER COST REFLECTS THE ADDITIONAL EXPENSE OF DISPOSING OF THE BATTERY CASINGS IF RECYCLING IS IMPRACTICAL. NO O&M COSTS ARE EXPECTED.
REMEDY :
THE REMEDY DESCRIBED IN THIS RECORD OF DECISION IS THE FIRST OF TWO OPERABLE UNITS PLANNED FOR THE SITE. THIS OPERABLE UNIT ADDRESSES THE SOURCE OF THE CONTAMINATION BY REMEDIATION OF THE BATTERY CASINGS AND CONTAMINATED SOILS. AN ESTIMATED 5,000 CUBIC YARDS OF SOIL AND 1,000 CUBIC YARDS OF BATTERY CASINGS REQUIRE REMEDIATION. ADDITIONAL REMEDIAL ACTIONS ADDRESSING CONTAMINANT MIGRATION PATHWAYS (DOWNGRADIENT SEDIMENTS AND GROUND WATER) WILL BE DETERMINED IN A SECOND OPERABLE UNIT RECORD OF DECISION.
THE SELECTED REMEDY INCLUDES THE FOLLOWING MAJOR ELEMENTS:

* RECYCLING OF BATTERY CASINGS.
* EXCAVATION OF LEAD CONTAMINATED SOIL, FIXATION OF THE SOIL, UTILIZING A CEMENT OR LIME-BASED FIXATION PROCESS AND DEPOSITING THE FIXED MATERIAL IN A LANDFILL THAT THE STATE HAS PERMITTED TO ACCEPT.

Item 30

REGION :4
SITE NAME :CELANESE CORP SHELBY FIBER OPERATIONS
LOCATION :SHELBY, NC
NTIS REPORT #:EPA/ROD/R04-89/046
ROD DATE :890328
ABSTRACT :
THE 450-ACRE CELANESE FIBER OPERATIONS (CFO) SITE IS A POLYESTER RAW-MATERIAL PRODUCTION FACILITY LOCATED IN CLEVELAND COUNTY, NORTH CAROLINA. THE PLANT'S FACILITIES INCLUDE A PLANT PRODUCTION AREA, WASTEWATER TREATMENT AREA, FORMER WASTE DISPOSAL AREAS, AND A LAND FARM AREA. THE ADJACENT LAND IS RURAL, AND SOME RESIDENCES ARE LOCATED WITHIN 1 MILE OF THE SITE. THE PLANT BEGAN OPERATIONS IN 1960 AS FIBER INDUSTRIES, INC. AND MANUFACTURED POLYESTER POLYMER CHIP AND FILAMENT YARN USING THE CHEMICALS DIMETHYL TEREPHTHALATE AND ETHYLENE GLYCOL. THE PLANT'S WASTE TREATMENT FACILITY WAS CONSTRUCTED IN PHASES CONCURRENT WITH THE MANUFACTURING PLANT; THUS, IN THE YEARS PRIOR TO THE COMPLETION OF THE TREATMENT FACILITY, CHEMICAL WASTES WERE DUMPED DIRECTLY INTO A DRAINAGE DITCH. TREATED EFFLUENT HAS BEEN DISCHARGED TO BUFFALO CREEK SINCE THE MID-1960S WHEN FIBER INDUSTRIES, INC. COMPLETED CONSTRUCTION OF THE TREATMENT FACILITY. CELANESE CORPORATION BOUGHT THE SITE AND FACILITIES IN 1983. IN ADDITION TO THE DISCHARGE FROM THE WASTEWATER TREATMENT PLANT, CFO ALSO DISCHARGES ALUM-TREATED BANDCASTER WATER DIRECTLY TO BUFFALO CREEK. SEVERAL AREAS AROUND THE PLANT HAVE

BEEN USED FOR WASTE DISPOSAL, INCLUDING OLD BURNING PITS FOR NORMAL PLANT WASTES (POLYESTER AND TRASH), A GLYCOL RECOVERY UNIT (GRU) SLUDGE BURIAL AREA, TWO SOAK-AWAY PONDS USED TO CONTAIN TREATED SANITARY SEWAGE FROM 1960 TO 1969, AND A FORMER DRUM STORAGE AND STAGING AREA. FOUR ADDITIONAL BURIED WASTE AREAS ARE LOCATED TO THE NORTH AND OUTSIDE OF THE MAIN PLANT PERIMETER FENCE; A POLYMER AND FIBER LANDFILL, A CONSTRUCTION DEBRIS LANDFILL, A 21-ACRE SLUDGE DISPOSAL AREA, AND A DRUM STORAGE AREA WHICH TEMPORARILY STORED 2,000 TO 3,000 DRUMS OF WASTE CHEMICALS AND SOLVENTS FROM 1970 TO 1978. THE DRUMS WERE REMOVED BY 1978. A 1988 RECORD OF DECISION ADDRESSED EXTRACTION AND TREATMENT OF CONTAMINATED GROUND WATER. THIS SECOND OPERABLE UNIT ADDRESSES SOURCE CONTROL INCLUDING CONTAMINATED SLUDGE AND SOIL ASSOCIATED WITH THE GLYCOL RECOVERY UNIT (GRU) TRENCHES AND BURN PIT AREAS. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL AND SEDIMENT ARE VOCS INCLUDING BENZENE AND TCE; OTHER ORGANICS INCLUDING PHENOLS AND PAHS; AND METALS INCLUDING LEAD AND CHROMIUM.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES EXCAVATION OF 3,710 YD(3) OF GLYCOL RECOVERY UNIT (GRU) SLUDGES, PLASTIC CHIPS, BURN PIT RESIDUALS, AND SEDIMENT WITH ONSITE INCINERATION OF CONTAMINATED SOIL AND GRU SLUDGES AND CHEMICAL FIXATION (SOLIDIFICATION) OF INCINERATOR ASH, PLASTIC CHIPS, BURN PIT RESIDUALS AND SEDIMENT, FOLLOWED BY DISPOSAL OF THE INERT, SOLIDIFIED MATERIAL IN THE EXCAVATED AREA; REGRADING AND FILLING OF EXCAVATED AREA; AND GROUND WATER MONITORING. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $3,500,000; O&M COSTS WERE NOT PROVIDED.

REMEDY :

THIS IS OPERABLE UNIT TWO OF THE REMEDIAL ACTIONS TO BE UNDERTAKEN AT THE SITE. THE ATTACHED INDEX IDENTIFIES THE ITEMS WHICH COMPRISE THE ADMINISTRATIVE RECORD UPON WHICH THE SELECTION OF A REMEDIAL ACTION IS BASED.

SOURCE CONTROL

* EXCAVATION OF GLYCOL RECOVERY UNIT (GRU) SLUDGES, PLASTIC CHIPS, BURN PIT RESIDUALS AND STREAM SEDIMENTS.
* INCINERATION ON-SITE OF CONTAMINATED SOILS AND GRU SLUDGES.
* CHEMICAL FIXATION (SOLIDIFICATION) OF INCINERATION ASH, PLASTIC CHIPS, BURN PIT RESIDUALS AND STEAM SEDIMENTS.
* ON-SITE DISPOSAL OF INERT, SOLIDIFIED MATERIAL.
* REGRADING
* MONITORING

Item 31

REGION :2
SITE NAME :PORT WASHINGTON LANDFILL
LOCATION :PORT WASHINGTON, NY
NTIS REPORT #:EPA/ROD/R02-89/082
ROD DATE :890930
ABSTRACT :

THE PORT WASHINGTON LANDFILL SITE IS ON THE EASTERN PORTION OF MANHASSET NECK, NASSAU COUNTY, LONG ISLAND, NEW YORK. THE 139-ACRE

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MUNICIPALLY OWNED SITE CONSISTS OF TWO LANDFILLED AREAS SEPARATED BY A VACANT AREA. THIS RECORD OF DECISION ADDRESSES THE 53-ACRE INACTIVE LANDFILL ON THE WESTERN PORTION OF THE SITE, WHICH IS THE SUSPECTED SOURCE OF METHANE GAS THOUGHT TO CAUSE FURNACE EXPLOSIONS IN RESIDENCES NEIGHBORING THE LANDFILL DURING 1979 THROUGH 1981. FROM 1974 TO 1983 THE LANDFILL OPERATOR ACCEPTED INCINERATOR RESIDUE, RESIDENTIAL AND COMMERCIAL REFUSE, AND CONSTRUCTION RUBBLE FOR DISPOSAL. BECAUSE EXTENSIVE AIR MONITORING, PERFORMED IN 1981, REVEALED HIGH METHANE LEVELS IN SEVERAL AREAS RESIDENCES, A VENTING SYSTEM WAS INSTALLED TO PREVENT SUBSURFACE GASES FROM MIGRATING WEST OF THE LANDFILL AND TO DESTROY HAZARDOUS CHEMICALS COMMONLY DETECTED IN SANITARY LANDFILL GAS. IN 1981 THE COUNTY ALSO DETERMINED THE PRESENCE OF VOC CONTAMINANTS IN A DRINKING WATER WELL ONSITE, WHICH HAS SINCE BEEN REMOVED FROM SERVICE. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL AND GROUND WATER ARE VOCS INCLUDING PCE, TCE, AND BENZENE; AND OTHER ORGANICS INCLUDING METHANE GAS.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES CAPPING THE LANDFILL; REHABILITATING THE EXISTING GAS COLLECTION SYSTEM AND INSTALLING ADDITIONAL VACUUM EXTRACTION VENTS; GROUND WATER PUMPING AND TREATMENT USING A METALS REMOVAL PROCESS AND AIR STRIPPING FOLLOWED BY DISCHARGE TO AN AQUIFER RECHARGE BASIN; AND ENVIRONMENTAL MONITORING USING GROUND WATER AND LANDFILL GAS WELLS. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $42,580,000, WHICH INCLUDES A PRESENT WORTH O&M COST OF $16,247,000 FOR 30 YEARS.

REMEDY :

THE MAJOR COMPONENTS OF THE SELECTED REMEDY INCLUDE:

* CLOSURE OF L-4 IN ACCORDANCE WITH THE 6 NYCRR PART 360 REQUIREMENTS FOR NEW YORK STATE SANITARY LANDFILLS;
* REHABILITATION OF THE EXISTING ACTIVE GAS VENTING SYSTEM;
* EXTENSION OF THE EXISTING ACTIVE GAS VENTING SYSTEM AROUND THE ENTIRE PERIMETER OF L-4;
* ADDITION OF A SECOND GAS COMBUSTION UNIT AS STANDBY;
* PLACEMENT OF EXTRACTION WELLS IN THE UPPER GLACIAL AQUIFER IN AREAS WITH ELEVATED LEVELS OF GROUNDWATER CONTAMINATION;
* TREATMENT OF EXTRACTED GROUNDWATER FROM THE UPPER GLACIAL AQUIFER THROUGH METALS REMOVAL AND AIR STRIPPING PRIOR TO DISCHARGE TO AN AQUIFER RECHARGE BASIN;
* TREATMENT OF GROUNDWATER AT THE SOUTHPORT WELL THROUGH AIR STRIPPING SHOULD THE PORT WASHINGTON WATER DISTRICT DECIDE TO USE THE SOUTHPORT WELL AS POTABLE WATER;
* INSTALLATION OF GROUNDWATER MONITORING WELLS TO FURTHER DEFINE THE EXTENT OF THE L-4 LEACHATE AND VOC PLUMES, AS WELL AS TO REFINE THE PLACEMENT OF THE PROPOSED EXTRACTION WELLS;
* INSTALLATION OF ADDITIONAL GROUNDWATER AND LANDFILL GAS WELLS AROUND L-4 TO BE USED IN CONJUNCTION WITH THE EXISTING LANDFILL GAS AND GROUNDWATER MONITORING NETWORK IN ORDER TO COMPREHENSIVELY MONITOR L-4;
* DEVELOPMENT AND CONDUCT OF A COMPREHENSIVE MONITORING PLAN FOR L-4, INCLUDING PERFORMANCE MONITORING OF THE GAS VENTING SYSTEM; AND

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* DEVELOPMENT AND CONDUCT OF AN OPERATION AND MAINTENANCE PLAN WHICH WILL GOVERN THOSE REMEDIAL ACTIONS SELECTED IN THIS ROD AS WELL AS THOSE PRESENTLY EMPLOYED FOR L-4.

Item 32

REGION :2
SITE NAME :RADIUM CHEMICAL COMPANY
LOCATION :WOODSIDE, NY
NTIS REPORT #:EPA/ROD/R02-90/103
ROD DATE :900621
ABSTRACT :

THE RADIUM CHEMICAL SITE CONSISTS OF A ONE-STORY BRICK BUILDING IN A LIGHT INDUSTRIAL/RESIDENTIAL SECTION IN WOODSIDE, QUEENS COUNTY, NEW YORK. THE RADIUM CHEMICAL COMPANY (RCC) PRODUCED LUMINOUS PAINT BEGINNING IN 1913 AND LATER MANUFACTURED, LEASED, AND SOLD RADIUM 226 TO HOSPITALS, MEDICAL CENTERS AND RESEARCH LABORATORIES. THE RADIUM SOURCES WERE STORED ONSITE IN LEAD CONTAINERS IN A POURED CONCRETE VAULT. IN 1983, THE STATE SUSPENDED THE RCC OPERATING LICENSE DUE TO DISPOSAL AND SAFETY INFRACTIONS AND IN 1987 ORDERED RCC TO REMOVE THE RADIUM SOURCES AND DECONTAMINATE THE BUILDING. RCC ABANDONED THE BUILDING WITHOUT COMPLYING LEAVING A LARGE NUMBER OF RADIUM-CONTAINING SEALED DEVICES, SOME OF WHICH WERE SUSPECTED OF RELEASING RADIUM AND RADON GAS. ALSO ONSITE WERE HUNDREDS OF CONTAINERS OF LABORATORY CHEMICALS. FROM 1988 TO 1989, EPA UNDERTOOK A LIMITED EMERGENCY REMOVAL ACTION TO SECURE THE FACILITY AND REMOVE THE RADIOACTIVE SOURCES. IN 1989, A PUBLIC HEALTH ADVISORY WAS ISSUED FOR THE SITE BASED ON THE THREATENED RELEASE OF RADIUM 226. THIS RECORD OF DECISION (ROD) SUPPLEMENTS THE EMERGENCY REMOVAL ACTION BY ADDRESSING THE REMAINING RESIDUAL RADIOACTIVE CONTAMINATION AT THE SITE INCLUDING DRUMMED HAZARDOUS WASTE CONTAMINATED WITH RADIUM. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL AND DEBRIS ARE RADIOACTIVE MATERIALS INCLUDING RADIUM 226 AND ITS DECAY PRODUCTS, INCLUDING RADON GAS.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES PARTIAL DECONTAMINATION AND COMPLETE DISMANTLING OF THE CONTAMINATED BUILDING, FOLLOWED BY OFFSITE DISPOSAL OF DEBRIS AS APPROPRIATE BASED ON A CONTAMINATION LEVEL; EXCAVATION AND OFFSITE DISPOSAL OF CONTAMINATED SOIL AND SUBSURFACE PIPING, FOLLOWED BY REPLACEMENT OF PIPING AND BACKFILLING WITH CLEAN SOIL; AND TREATMENT OF SOME RADIUM-CONTAMINATED HAZARDOUS WASTE, FOLLOWED BY OFFSITE DISPOSAL OF TREATED AND UNTREATED RADIUM-CONTAMINATED HAZARDOUS WASTES IN APPROVED FACILITIES. THE ESTIMATED TOTAL COST FOR THIS REMEDIAL ACTION IS $18,699,000. O&M COSTS ARE INCLUDED IN THE TOTAL COST ESTIMATE.

PERFORMANCE STANDARDS OR GOALS: ALL SOIL WILL BE EXCAVATED AND DISPOSED OF OFFSITE THAT EXCEEDS 5 PCI/G ABOVE BACKGROUND AT THE SURFACE IN THE FIRST SIX INCHES AND 15 PCI/G ABOVE BACKGROUND AT THE SUBSURFACE (I.E, SUBSEQUENT 6-INCH LAYERS). BUILDING MASONRY WITH LESS THAN 5 PCI/G RADIUM226 WILL BE DISPOSED OF IN A SANITARY LANDFILL, MASONRY EXCEEDING THIS LEVEL AND OTHER MATERIAL (E.G., STEEL) EXCEEDING SPECIFIC SURFACE CONTAMINATION LEVELS WILL BE DISPOSED OF OFFSITE ALONG WITH THE

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SOIL AT A RADIOACTIVE WASTE DISPOSAL FACILITY. CHEMICAL-SPECIFIC GOALS FOR RADIUM-CONTAMINATED HAZARDOUS WASTE WERE NOT SPECIFIED.
REMEDY :
THIS FINAL REMEDY ADDRESSES REMEDIATION OF THE RESIDUAL RADIOACTIVE CONTAMINATION REMAINING AT THE SITE BY ELIMINATING OR REDUCING THE RISKS POSED BY THE SITE. THE MAJOR COMPONENTS OF THE SELECTED REMEDY INCLUDE:

* PARTIAL DECONTAMINATION OF THE BUILDING FOLLOWED BY COMPLETE DISMANTLING OF THE BUILDING AND DISPOSAL OF CONTAMINATED MATERIAL IN AN APPROVED RADIOACTIVE WASTE FACILITY AND CLEAN MATERIAL IN AN APPROVED SANITARY LANDFILL;
* SURFACE AND SUBSURFACE SOIL INVESTIGATION WITH EXCAVATION AND DISPOSAL OF ANY CONTAMINATED MATERIAL IN AN APPROVED RADIOACTIVE WASTE FACILITY FOLLOWED BY BACKFILLING WITH CLEAN SOIL;
* SUBSURFACE PIPING, INCLUDING SEWER LINE, INVESTIGATION WITH DISPOSAL OF ANY CONTAMINATED MATERIAL IN AN APPROVED RADIOACTIVE WASTE FACILITY FOLLOWED BY REPLACEMENT WITH CLEAN MATERIAL; AND
* TREATMENT OF SOME RADIUM-CONTAMINATED HAZARDOUS WASTE FOLLOWED BY DISPOSAL OF TREATED AND UNTREATED RADIUM CONTAMINATED HAZARDOUS WASTES IN APPROVED FACILITIES.

Item 33

REGION :5
SITE NAME :NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT
LOCATION :FRIDLEY, MN
NTIS REPORT #:EPA/ROD/R05-90/136
ROD DATE :900928
ABSTRACT :
THE 82.6-ACRE NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT (NIROP) SITE IS A WEAPONS SYSTEM MANUFACTURING FACILITY IN FRIDLEY, MINNESOTA, WHICH BEGAN OPERATIONS IN 1940. THE SITE IS A GOVERNMENT-OWNED, CONTRACTOR-OPERATED, PLANT LOCATED JUST NORTH OF THE FMC CORP. SUPERFUND SITE. NIROP IS LOCATED APPROXIMATELY 30 FEET ABOVE AND 700 FEET EAST OF THE MISSISSIPPI RIVER AND LESS THAN ONE MILE UPSTREAM FROM THE CITY OF MINNEAPOLIS DRINKING WATER SUPPLY INTAKE. DURING THE 1970S, PAINT SLUDGE AND CHLORINATED SOLVENTS WERE DISPOSED OF ONSITE IN PITS AND TRENCHES. IN 1981, STATE INVESTIGATIONS IDENTIFIED TCE IN ONSITE WATER SUPPLY WELLS DRAWING FROM THE PRAIRIE DUCHIEN/JORDAN AQUIFER, AND THE WELLS WERE SHUT DOWN. IN 1983, EPA FOUND DRUMMED WASTE IN THE TRENCHES OR PITS AT THE NORTHERN PORTION OF THE SITE, AND AS A RESULT, DURING 1983 AND 1984, THE NAVY AUTHORIZED AN INSTALLATION RESTORATION PROGRAM, DURING WHICH APPROXIMATELY 1,200 CUBIC YARDS OF CONTAMINATED SOIL AND 42 DRUMS WERE EXCAVATED AND LANDFILLED OFFSITE. IN 1987, TCE USE AT THE SITE WAS DISCONTINUED, BUT THE PRINCIPAL THREAT POSED BY THE SITE IS THE CONTINUED MIGRATION OF TCE VIA GROUND WATER TO THE MISSISSIPPI RIVER. THIS RECORD OF DECISION (ROD) ADDRESSES THE REMEDIATION OF A SHALLOW GROUND WATER OPERABLE UNIT. THE NEED FOR A SECOND OPERABLE UNIT TO TREAT POTENTIAL CONTAMINATION SOURCES WILL BE DETERMINED PENDING THE

RESULTS OF ADDITIONAL INVESTIGATIONS. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE GROUND WATER ARE VOCS INCLUDING PCE, TCE, TOLUENE, AND XYLENE.

THE SELECTED REMEDIAL ACTION FOR THE SITE IS A TWO-PHASED APPROACH. PHASE I INCLUDES GROUND WATER PUMPING AND PRE-TREATMENT, AS NECESSARY, BEFORE DISPOSAL TO A LOCAL PUBLICLY OWNED TREATMENT WORKS (POTW) VIA AN EXISTING SANITARY SEWER SYSTEM; AND TESTING THE RECOVERED WATER TO ASSIST IN THE DESIGN OF PHASE II TREATMENT FACILITIES; PHASE II INCLUDES TREATING THE RECOVERED GROUND WATER BY EITHER A TWO-STAGE AIR STRIPPING PROCESS, FOLLOWED BY VAPOR-PHASE GRANULAR ACTIVATED CARBON (GAC) TO TREAT AIR EMISSIONS, OR TREATING GROUND WATER USING AQUEOUS-PHASE GAC, DEPENDING ON PHASE I TEST RESULTS; AND DISCHARGING TREATED GROUND WATER INTO THE MISSISSIPPI RIVER. BOTH OPTIONS INCLUDE DISPOSAL OF THE TREATED EFFLUENT OFFSITE AND REGENERATING THE SPENT CARBON AT AN OFFSITE FACILITY. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $4,100,000 FOR THE GAC-ONLY OPTION. O&M COSTS WERE NOT PROVIDED.

PERFORMANCE STANDARDS OR GOALS: GROUND WATER QUALITY IN THE UNCONSOLIDATED AQUIFER AT THE SITE WILL BE RESTORED TO MCLS OR STATE RECOMMENDED ALLOWABLE LIMITS, IF MORE RESTRICTIVE. BECAUSE TCE WAS FOUND WITH THE GREATEST FREQUENCY AND IN THE HIGHEST CONCENTRATIONS AT THE SITE THAN ANY OTHER VOC, TCE 5.0 UG/L (MCL) WAS ESTABLISHED AS THE TARGET CLEANUP GOAL FOR GROUND WATER IN THE AQUIFER. CLEANUP LEVELS FOR RECOVERED GROUND WATER DISCHARGED TO THE LOCAL POTW MUST NOT EXCEED 10 MG/L AND INDIVIDUAL VOC LEVELS MUST BE LESS THAN 3 MG/L (LOCAL POTW STANDARDS). CONTAMINANTS IN ANY UNCAPTURED PORTION OF THE AQUIFER ARE EXPECTED TO DISSIPATE BY NATURAL MEANS OVER TIME.

REMEDY :

THIS ACTION ADDRESSES THE PRINCIPAL THREAT POSED BY THE NIROP BY PREVENTING ENDANGERMENT OF PUBLIC HEALTH, WELFARE, OR THE ENVIRONMENT BY IMPLEMENTATION OF THIS RECORD OF DECISION THROUGH HYDRAULIC CONTAINMENT AND RECOVERY OF ALL FUTURE MIGRATION OF CONTAMINATED GROUND WATER FROM THE NIROP AND BY RECOVERY, TO THE EXTENT FEASIBLE, OF CONTAMINATION DOWNGRADIENT OF THE NIROP.

THE SELECTED REMEDY INCLUDES INSTALLATION AND OPERATION OF GROUND WATER CONTAINMENT AND RECOVERY WELLS, WITH A TWO-PHASED PLAN FOR DISPOSAL OF THE GROUND WATER FROM THE WELL SYSTEM.

UNDER PHASE I, THE CONTAMINATED GROUND WATER FROM THE CONTAINMENT AND RECOVERY WELL SYSTEM WILL BE DISCHARGED DIRECTLY TO THE EXISTING SANITARY SEWER SYSTEM, FOR TREATMENT AT THE LOCAL WASTEWATER TREATMENT FACILITY. PRETREATMENT WILL BE PROVIDED IF NECESSARY TO MEET LOCAL DISCHARGE REQUIREMENTS. PHASE I ACTIVITIES WILL ALSO INCLUDE FIELD TESTING OF THE RECOVERED GROUND WATER, FOLLOWED BY DESIGN OF A GROUND WATER TREATMENT PLANT AT THE NIROP. PRIOR TO START-UP OF THE GROUND WATER CONTAINMENT SYSTEM, THE NAVY WILL SUBMIT A GROUND WATER MONITORING PROGRAM FOR APPROVAL BY THE USEPA AND MPCA, TO CONFIRM THAT CONTAINMENT OF THE GROUND WATER PLUME IS EFFECTIVE.

DURING THE FIRST 90 DAYS OF RECOVERY SYSTEM OPERATION, THE NAVY WILL COLLECT DATA TO DETERMINE WHETHER HYDRAULIC CONTAINMENT IS BEING EFFECTIVELY ACHIEVED. THIS DETERMINATION WILL BE SUMMARIZED IN A

DOCUMENT WHICH WILL BE SENT TO THE USEPA AND MPCA FOR REVIEW AND APPROVAL AT THE END OF THE 90-DAY PERIOD. THE USEPA AND MPCA WILL PROVIDE WRITTEN APPROVAL OF, OR COMMENTS ON, THE DETERMINATION DOCUMENT WITHIN 30 DAYS AFTER ITS RECEIPT. IF THE USEPA AND MPCA DO NOT APPROVE THE DETERMINATION DOCUMENT, THE NAVY WILL SUBMIT A REVISED DETERMINATION DOCUMENT TO THE USEPA AND MPCA WITHIN 60 DAYS AFTER THE NAVY IS NOTIFIED OF SPECIFIC DEFICIENCIES IN THE DOCUMENT. IF THE DETERMINATION DOCUMENT, AFTER ITS APPROVAL BY THE USEPA AND MPCA, INDICATES THAT EFFECTIVE HYDRAULIC CONTAINMENT IS NOT BEING PROVIDED BY THE GROUND WATER RECOVERY SYSTEM, THE NAVY WILL PREPARE AND SUBMIT TO USEPA AND MPCA A WRITTEN PLAN FOR UPGRADING THE RECOVERY SYSTEM TO ASSURE THAT THE PERFORMANCE OBJECTIVES OF THE CONTAINMENT SYSTEM ARE MET, AND THE NAVY WILL IMPLEMENT THE FINALLY APPROVED PLAN.
UNDER PHASE II, WITHIN 365 DAYS AFTER THE USEPA AND MPCA APPROVE THE DETERMINATION THAT THE GROUP WATER CONTAINMENT AND RECOVERY SYSTEM IS EFFECTIVE, DESIGN DOCUMENTS FOR A GROUND WATER TREATMENT SYSTEM WILL BE COMPLETED BY THE NAVY AND APPROVED BY THE USEPA AND MPCA. TREATED GROUND WATER WILL BE DISCHARGED TO THE MISSISSIPPI RIVER VIA A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM SEWER DISCHARGE.
A PORTION OF THE AQUIFER WITHIN THE ANOKA COUNTY PARKLAND CLOSEST TO THE MISSISSIPPI RIVER MAY NOT FAIL WITHIN THE ZONE OF CAPTURE OF THE GROUND WATER RECOVERY SYSTEM. HOWEVER, SHOULD THIS OCCUR, CONTAMINANTS IN ANY UNCAPTURED PORTION OF THE AQUIFER ARE EXPECTED TO DISSIPATE BY NATURAL MEANS OVER TIME TO LEVELS THAT ARE PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT. SHOULD THE CITY OF MINNEAPOLIS OR ANOTHER COMMUNITY DECIDE IN THE FUTURE TO DEVELOP A SUPPLEMENTAL WATER SUPPLY WELL SYSTEM IN THE ANOKA COUNTY PARKLAND, THE NAVY WILL CONTROL THE HEALTH RISK WITHIN ACCEPTABLE LEVELS BY IMPLEMENTATION OF A GROUND WATER TREATMENT SYSTEM OR OTHER MEASURES AS APPROVED BY THE MPCA AND THE USEPA.

Item 34

REGION :7
SITE NAME :WHEELING DISPOSAL SERVICE CO INC
LOCATION :AMAZONIA, MO
NTIS REPORT #:EPA/ROD/R07-90/044
ROD DATE :900927
ABSTRACT :
THE 200-ACRE WHEELING DISPOSAL SERVICE SITE IS AN INACTIVE INDUSTRIAL AND SANITARY LANDFILL IN AMAZONIA, MISSOURI. ONSITE DISPOSAL FEATURES INCLUDE NINE SOLID WASTE TRENCHES, FIVE LIQUID WASTE TRENCHES, TWO EVAPORATION PONDS, A FARM CHEMICAL AREA, THREE TANNERY WASTE AREAS, AND A RINSED CONTAINER AREA. SURROUNDING LAND USE IS MIXED RESIDENTIAL AND AGRICULTURAL. FROM 1964 UNTIL THE LANDFILL WAS CLOSED IN 1986, MUNICIPAL AND INDUSTRIAL WASTES, INCLUDING TANNING SLUDGES, PESTICIDES, ASBESTOS, LABORATORY WASTES, CONSTRUCTION DEBRIS, PAINT SLUDGES, BATTERY AND CYANIDE WASTE, AND CRUSHED DRUMS, WERE DISPOSED OF IN THE VARIOUS ONSITE DISPOSAL UNITS. EPA AND THE STATE CONDUCTED ONSITE AND OFFSITE INVESTIGATIONS FROM 1980 TO 1987 THAT IDENTIFIED THE PRESENCE OF ONSITE CONTAMINATION WITH NO EVIDENCE OF OFFSITE CONTAMINANT MIGRATION. THE

REMEDIAL INVESTIGATION/FEASIBILITY STUDY CONDUCTED IN 1989 AND 1990 CONFIRMED THESE RESULTS. THIS RECORD OF DECISION (ROD) ADDRESSES BOTH SOURCE CONTROL AND MANAGEMENT OF CONTAMINANT MIGRATION, AND IS A FINAL REMEDY. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL, SEDIMENT, GROUND WATER, AND SURFACE WATER ARE VOCS INCLUDING TCE AND TOLUENE; OTHER ORGANICS INCLUDING PESTICIDES; AND METALS INCLUDING ARSENIC, CHROMIUM, AND LEAD.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES UPGRADING THE EXISTING LANDFILL CAP WITH A REVEGETATED CLAY AND SOIL COVER; MONITORING ONSITE GROUND AND SURFACE WATER; ABANDONING ONSITE WELLS; AND IMPLEMENTING INSTITUTIONAL CONTROLS INCLUDING DEED RESTRICTIONS, AND SITE ACCESS RESTRICTIONS SUCH AS FENCING. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $1,205,800, WHICH INCLUDES AN ANNUAL O&M COST OF $42,000 FOR 30 YEARS.

PERFORMANCE STANDARDS OR GOALS; PERFORMANCE CRITERIA FOR GROUND WATER AND SURFACE WATER WILL BE DEVELOPED, AND MAY BE BASED ON FEDERAL MCLS OR AMBIENT WATER QUALITY CRITERIA, OR STATE WATER QUALITY STANDARDS. IF CONTAMINANT LEVELS EXCEED THESE CRITERIA, GROUND WATER TREATMENT AND/OR LEACHATE COLLECTION AND TREATMENT MAY BE REQUIRED.

REMEDY :

THE SELECTED REMEDY IS INTENDED TO BE A FINAL REMEDIAL ACTION FOR THE SITE AND, SUBSEQUENTLY, ADDRESSES ALL CONTAMINATION ASSOCIATED WITH THE SITE. THE MAJOR COMPONENTS OF THE SELECTED REMEDY INCLUDE;

* UPGRADING THE EXISTING COVER OVER THE DISPOSAL UNITS;
* LONG-TERM MONITORING OF GROUND WATER AND SURFACE WATER;
* IMPLEMENTING SITE MAINTENANCE ACTIVITIES;
* USING DEED RESTRICTIONS TO PREVENT FARMING ON CERTAIN AREAS ONSITE;
* INSTALLING SECURITY MEASURES SUCH AS WARNING SIGNS AND/OR FENCES; AND,
* CLOSING CERTAIN ONSITE WELLS.

THESE RESPONSE ACTIONS WOULD MINIMIZE FUTURE INGESTION/DERMAL CONTACT OF HAZARDOUS SUBSTANCES BY CONTAINING AND MONITORING THE ONSITE, CONTAMINATED GROUND WATER AND SURFACE WATER, AND BY MAINTAINING AN EFFECTIVE COVER OVER THE DISPOSAL UNITS.

ALTHOUGH NOT REQUIRED INITIALLY, CONTINGENCIES FOR FUTURE COLLECTION AND TREATMENT OF CONTAMINATED SURFACE WATER AND/OR GROUND WATER ARE PROVIDED FOR IN THE SELECTED REMEDY IF PERFORMANCE CRITERIA ARE EXCEEDED AT DESIGNATED POINTS OF COMPLIANCE.

Item 35

REGION :4
SITE NAME :LEWISBURG DUMP
LOCATION :LEWISBURG, TN
NTIS REPORT #:EPA/ROD/R04-90/069
ROD DATE :900919
ABSTRACT :

THE 20-ACRE LEWISBURG DUMP SITE INCLUDES A 4-ACRE ABANDONED LANDFILL DEVELOPED IN AN ABANDONED 6-ACRE LIMESTONE QUARRY IN LEWISBURG, MARSHALL

COUNTY, TENNESSEE. LAND IN THE VICINITY OF THE SITE IS PRIMARILY USED AS FARM AND PASTURE LAND. THERE ARE FOUR PUBLIC WATER WELLS LOCATED WITHIN ONE-HALF MILE OF THE SITE. THIS MUNICIPALLY-OWNED AND OPERATED SITE BEGAN LANDFILLING OPERATIONS BETWEEN 1963 AND 1969, AND A VARIETY OF RESIDENTIAL AND INDUSTRIAL WASTES, INCLUDING SOLVENTS AND METALLIC WASTES WERE LANDFILLED ONSITE. SOME MUNICIPAL WASTE WAS BURNED ONSITE, AND THE RESULTING ASH WAS PLACED IN THE DUMP. SOIL SAMPLES TAKEN FROM VARIOUS TEST PITS DURING STATE INVESTIGATIONS SHOWED ELEVATED LEVELS OF METALS AND ORGANICS ONSITE. IN ADDITION, A 2-ACRE QUARRY POND WAS SUSPECTED TO BE CONTAMINATED WHEN OIL AND OTHER DEBRIS WERE SEEN FLOATING ON ITS SURFACE AND GAS BUBBLES WERE OBSERVED IN THE ABSENCE OF ANY AQUATIC LIFE. IN 1973, THE STATE FOUND THAT THE OLD QUARRY WAS IN VIOLATION OF RECENT, MORE STRINGENT STATE ENVIRONMENTAL LAWS, AND CONCLUDED THAT LANDFILLING OPERATIONS SHOULD BE DISCONTINUED. IN 1975, THE STATE APPROVED PLANS FOR INTERIM MAINTENANCE AND FINAL CLOSURE OF THE DUMP. IN 1977, THE WASTE WAS COVERED WITH SOIL AS PART OF THE PRELIMINARY CLOSURE ACTIVITIES. THIS RECORD OF DECISION (ROD) ADDRESSES THE CONTAMINATED SOIL AND DEBRIS PRESENT AT THE SITE IN THE LANDFILL AND IN THE QUARRY POND, AND PROVIDES FOR PROTECTION OF THE GROUND WATER, POND WATER, AND SEDIMENT FROM FURTHER CONTAMINATION. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL AND DEBRIS ARE ORGANICS INCLUDING BIS(2-ETHYLHEXYL)PHTHALATE (DEHP); AND METALS INCLUDING ALUMINUM, BARIUM, COPPER, ZINC, AND MANGANESE.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES REMOVING LANDFILL SURFACE AND QUARRY DEBRIS AND DISPOSING OF THE WASTES IN ONE OF THE TEST PITS AT THE SITE, AN APPROVED SANITARY LANDFILL, OR A HAZARDOUS WASTE LANDFILL; REPLACING THE PLASTIC TEST-PIT CAPS WITH LANDFILL CAP MATERIAL; REGRADING THE LANDFILL CAP TO STABILIZE SITE CONDITIONS AND TO MEET STATE AND FEDERAL REGULATIONS; REVEGETATING THE LANDFILL; CONDUCTING LONG-TERM GROUND WATER MONITORING AND ANALYSIS; AND IMPLEMENTING INSTITUTIONAL CONTROLS INCLUDING DEED RESTRICTIONS TO RESTRICT SITE USAGE, AND SITE ACCESS RESTRICTIONS SUCH AS FENCING. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION RANGES BETWEEN $791,512 AND $1,189,741 (DEPENDING ON WHICH OF THE THREE DISPOSAL OPTIONS IS IMPLEMENTED), WHICH INCLUDES A TOTAL O&M COST OF $270,042 FOR YEARS 0 TO 5.

PERFORMANCE STANDARDS OR GOALS: NO CHEMICAL-SPECIFIC CLEANUP GOALS FOR SOIL OR DEBRIS WERE PROVIDED. SOURCE TREATMENT AND REMOVAL SHOULD INDIRECTLY REDUCE THE LEVEL OF GROUND WATER CONTAMINATION. CHEMICAL-SPECIFIC GROUND WATER CLEANUP GOALS ARE BASED PRIMARILY ON THE PROPOSED MCL FOR DEHP 4.0 UG/L. THE SURFACE WATER CLEANUP GOAL FOR COPPER IS 12.0 UG/L, WHICH WILL BE LESS THAN OR EQUAL TO A HAZARD QUOTIENT OF 1.0.

REMEDY :

THE FINAL REMEDY IMPLEMENTS REMEDIATION OF THE SITE CONTAMINATION BY ELIMINATING OR REDUCING THE RISKS POSED BY THE SITE THROUGH CONTAINMENT AND INSTITUTIONAL CONTROLS.

THE MAJOR COMPONENTS OF THE SELECTED REMEDY INCLUDE;

* INSTALLATION OF A SECURITY FENCE AND IMPLEMENTATION OF DEED RESTRICTIONS.

* REMOVAL OF THE SUBMERGED POND DEBRIS.
* REMOVAL OF SURFACE DEBRIS AT THE SITE.
* REPLACEMENT OF PLASTIC TEST-PIT CAPS WITH CLAY AND SOIL.
* REGRADING OF THE LANDFILL CAP TO MEET ALL STATE AND FEDERAL REQUIREMENTS.
* A FIVE-YEAR WELL MONITORING AND ANALYSIS PROGRAM IS PROVIDED TO MEASURE THE EFFECTIVENESS OF THE REMEDIAL MEASURES. THIS PROGRAM WILL INCLUDE A DYE-TRACER STUDY TO EFFECTIVELY IDENTIFY PREFERRED/APPROPRIATE MONITORING STATIONS.

Item 36

REGION :2
SITE NAME :SARNEY FARM
LOCATION :AMENIA, NY
NTIS REPORT #:EPA/ROD/R02-90/124
ROD DATE :900927
ABSTRACT :

THE 143-ACRE SARNEY FARM SITE INCLUDES A FORMER 5-ACRE LANDFILL IN AMENIA, DUTCHESS COUNTY, NEW YORK. LAND IN THE AREA IS USED AS FARM LAND AND INCLUDES WETLANDS. THE SITE OVERLIES A BEDROCK AQUIFER, WHICH IS CURRENTLY USED AS A DRINKING WATER SOURCE. APPROXIMATELY 2,000 RESIDENCES ARE LOCATED WITHIN ONE MILE OF THE SITE. IN 1968, THE PORTION OF THE SITE THAT INCLUDED A 5-ACRE SANITARY LANDFILL WAS PURCHASED BY HARRIS HAUL-A-WAY. INVESTIGATIONS LATER THAT YEAR REVEALED THAT INDUSTRIAL WASTES INCLUDING APPROXIMATELY 40 DRUMS OF WASTE SOLVENTS WERE BEING DISPOSED OF ILLEGALLY IN SEVERAL ONSITE AREAS. IN 1970, THE STATE ORDERED THE ILLEGAL DUMPING TO CEASE. SITE STUDIES BY PRIVATE PARTIES HAVE IDENTIFIED TWO TRENCH AREAS USED FOR HAZARDOUS WASTE DISPOSAL, AND ACTING AS LOCALIZED SOURCES OF ONSITE SOIL CONTAMINATION. IN BOTH AREAS, SOIL CONTAMINANTS HAVE INFILTRATED INTO THE ONSITE GROUND WATER, BUT ONLY IN LIMITED AMOUNTS. APPROXIMATELY 40 DRUMS WERE CRUSHED OR BURIED ONSITE IN THE TWO DISPOSAL AREAS. IN 1987, EPA INITIATED A SUPERFUND REMOVAL/TREATMENT ACTION FOR ORGANIC CONTAMINATION, INCLUDING INSTALLING AN IN-SITU SOIL WASHING SYSTEM AT TWO AREAS. ONE OF THESE AREAS IS ADDRESSED IN THIS RECORD OF DECISION (ROD). THIS ROD ADDRESSES THE REMEDIATION OF ONSITE CONTAMINATED SOIL, DEBRIS, AND GROUND WATER IN TWO SOURCE AREAS. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL, DEBRIS, AND GROUND WATER ARE VOCS INCLUDING TOLUENE; OTHER ORGANICS INCLUDING PESTICIDES; AND METALS INCLUDING LEAD.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES REMOVING WASTE DRUMS FROM TRENCH AREAS 2 & 4 AND DISPOSING OF THESE OFFSITE AT A PERMITTED FACILITY; TREATING ONSITE APPROXIMATELY 2,365 CUBIC YARDS OF CONTAMINATED SOIL FROM THE AREAS SURROUNDING THE DRUMS STORAGE AREA USING LOW TEMPERATURE THERMAL TREATMENT, OR IF SOIL CONTAMINATION IS AT HIGHLY ELEVATED LEVELS, THE SURROUNDING SOIL MAY BE REMOVED OFFSITE AND DISPOSED OF WITH THE DRUMS; BACKFILLING THE EXCAVATED AREAS WITH ANY ONSITE-TREATED SOIL; ALLOWING FOR NATURAL ATTENUATION OF GROUND WATER;

CONDUCTING HYDROGEOLOGIC STUDIES ONSITE TO BETTER DEFINE THE HYDROLOGIC CONDITION OF THE SITE; GROUND WATER AND SURFACE WATER MONITORING; AND IMPLEMENTING INSTITUTIONAL CONTROLS INCLUDING DEED RESTRICTIONS. THE PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $907,500, WHICH INCLUDES AN ANNUAL O&M COST OF $15,300 FOR 30 YEARS.

PERFORMANCE STANDARDS OR GOALS; CHEMICAL-SPECIFIC CLEANUP LEVELS FOR SOIL ARE BASED ON RISK-BASED LEVELS (10-5) AND INCLUDE TCE 0.2 UG/L, AND TOLUENE 3.3 UG/L. THESE LEVELS ARE BASED ON THE MAXIMUM SOIL CONCENTRATIONS NEEDED TO REACH A 99.9 PERCENT TREATMENT EFFICIENCY. GROUND WATER CONTAMINANT LEVELS ARE EXPECTED TO DECREASE ONCE SOURCE CONTAMINATION IS ELIMINATED. THE ESTIMATED TIME FRAME FOR GROUND WATER ATTENUATION TO ACCEPTABLE LEVELS IS 30 YEARS.

REMEDY :

A REMEDIAL ACTION WILL BE UNDERTAKEN FOR CONTAMINATED SOIL AND BURIED DRUMMED WASTES FOUND AT LOCALIZED AREAS OF THE SITE. IN ADDITION, GROUND AND SURFACE WATER WILL BE SAMPLED AND MONITORED PERIODICALLY; HYDROGEOLOGICAL TESTING WILL ALSO BE PERFORMED. THIS ACTION COMPLEMENTS A REMOVAL ACTION INITIATED IN OCTOBER 1987, CONSISTING OF THE INSTALLATION OF A SOIL FLUSHING SYSTEM WHICH COLLECTS AND TREATS LEACHATE EMANATING FROM TWO AREAS OF THE SITE. THE REMEDY ADDRESSES THE PRINCIPAL THREAT POSED BY THE DRUMMED WASTE AND CONTAMINATED SOIL.

THE MAJOR COMPONENTS OF THE SELECTED REMEDY INCLUDE;

* EXCAVATION OF CONTAMINATED SOIL AND BURIED DRUMS.
* TRANSPORTATION OF CONTAMINATED DRUMS TO AN OFF-SITE TREATMENT AND DISPOSAL FACILITY.
* ON-SITE LOW TEMPERATURE THERMAL TREATMENT OF CONTAMINATED SOIL.
* GRADING OF THE EXCAVATED AREAS WITH THE TREATED SOIL.
* LONG-TERM MONITORING PROGRAM FOR SURFACE WATER, GROUNDWATER, AND RESIDENTIAL WELLS TO VERIFY THAT CONTAMINANTS ARE NOT MIGRATING FROM THE SITE, INSTALLATION OF ADDITIONAL MONITORING WELLS (IF NECESSARY), AND HYDROGEOLOGICAL TESTING TO ENSURE THAT THE REMEDY CONTINUES TO BE PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT.

Item 37

REGION :2
SITE NAME :CINNAMINSON GROUND WATER CONTAMINATION
LOCATION :CINNAMINSON TWP, NJ
NTIS REPORT #:EPA/ROD/R02-90/127
ROD DATE :900928
ABSTRACT :

THE 400-ACRE CINNAMINSON GROUNDWATER CONTAMINATION SITE IS IN THE TOWNSHIPS OF CINNAMINSON AND DELRAN, BURLINGTON COUNTY, NEW JERSEY, AND IS COMPRISED OF A LANDFILL, SEVERAL INDUSTRIAL OPERATIONS, AND RESIDENTIAL PROPERTIES. THE SITE OVERLIES A DEEP AND A SHALLOW AQUIFER, AND THE LATTER IS A POTENTIAL SOURCE OF DRINKING WATER. FURTHERMORE,

THE SITE LIES WITHIN THE DELAWARE RIVER FLOODPLAIN. LAND USE IN THE VICINITY OF THE SITE IS RESIDENTIAL, AGRICULTURAL, AND INDUSTRIAL. THE ONSITE LANDFILL WAS ORIGINALLY USED FOR SAND AND GRAVEL MINING OPERATIONS. FROM 1950 TO 1980, MUNICIPAL SOLID WASTE AND OTHER REFUSE WERE DEPOSITED IN THE MINING PITS, WHILE MINING OPERATIONS CONTINUED IN OTHER SITE AREAS. IN 1970, SANITARY LANDFILL INC. (SLI) OPERATED AN ONSITE SANITARY LANDFILL IN THE SAME AREA, WHICH ACCEPTED HAZARDOUS INDUSTRIAL WASTE. IN 1980, THE STATE IDENTIFIED IMPROPER WASTE DISPOSAL PRACTICES ONSITE, AND ORDERED SLI TO CLOSE THE LANDFILL. IN 1981 AS PART OF THE CLOSURE PLAN, SLI CAPPED THE LANDFILL WITH 18 INCHES OF CLAY, INSTALLED A GAS COLLECTION AND VENTING SYSTEM, AND INITIATED GROUND WATER MONITORING. SUBSEQUENT GROUND WATER STUDIES BY EPA AND SLI IDENTIFIED ONSITE GROUND WATER CONTAMINATION IN THE LANDFILL AREA. ADDITIONALLY, VARIOUS ONSITE INDUSTRIAL OPERATIONS AND LOCAL AREA SEPTIC SYSTEMS WERE ALSO IDENTIFIED AS POTENTIAL SOURCES OF GROUND WATER CONTAMINATION. THIS RECORD OF DECISION (ROD) ADDRESSES REMEDIATION OF ONSITE CONTAMINATED GROUND WATER IN THE SHALLOW AND DEEP AQUIFERS, AND PREVENTION OF FURTHER MIGRATION OF CONTAMINATION INTO MUNICIPAL WELLS. THE ADEQUACY OF THE SLI LANDFILL CLOSURE WILL BE ADDRESSED IN A SUBSEQUENT ROD. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE GROUND WATER ARE VOCS INCLUDING BENZENE, PCE, TCE, TOLUENE, AND XYLENES; OTHER ORGANICS INCLUDING PAHS AND PHENOLS; AND METALS INCLUDING ARSENIC, CHROMIUM, AND LEAD.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES PUMPING AND TREATMENT OF GROUND WATER FROM THE SHALLOW AND DEEP AQUIFERS USING CHEMICAL PRECIPITATION AND BIOLOGICAL/GRANULAR ACTIVATED CARBON; REINJECTING THE TREATED WATER ONSITE INTO THE DEEP AQUIFER; GROUND WATER MONITORING; AND IMPLEMENTING ENGINEERING AND INSTITUTIONAL CONTROLS. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $20,500,000, WHICH INCLUDES AN ANNUAL O&M COST OF $751,000 FOR 30 YEARS.

PERFORMANCE STANDARDS OR GOALS; CHEMICAL-SPECIFIC GROUND WATER CLEANUP GOALS ARE BASED ON THE MORE STRINGENT OF SDWA MCLS OR STATE STANDARDS, AND INCLUDE BENZENE 1 UG/L (STATE), XYLENES 44 UG/L (STATE), AND ARSENIC 50 UG/L (STATE).

REMEDY :

THE SELECTED REMEDY WILL INCLUDE GROUND WATER EXTRACTION FOR AN ESTIMATED PERIOD OF 30 YEARS, DURING WHICH THE SYSTEM'S PERFORMANCE WILL BE MONITORED ON A REGULAR BASIS AND ADJUSTED ACCORDING TO PERFORMANCE DATA COLLECTED DURING OPERATION. THE OPERATING SYSTEM MAY INCLUDE;

* DISCONTINUING OPERATION OF EXTRACTION WELLS IN AREAS WHERE CLEANUP GOALS HAVE BEEN ATTAINED;
* ALTERNATING PUMPING AT WELLS TO ELIMINATE STAGNATION POINTS;
* PULSE PUMPING TO ALLOW AQUIFER EQUILIBRATION AND ENCOURAGE ADSORBED CONTAMINANTS TO PARTITION INTO GROUND WATER; AND
* THE INSTALLATION OF ADDITIONAL WELLS TO OPTIMIZE SYSTEM PERFORMANCE.

THE TOTAL ESTIMATED CAPITAL COST FOR ALTERNATIVE MM-5, USING OPTION C AS THE SELECTED TREATMENT TECHNOLOGY, IS $8.4 MILLION. THIS COST INCLUDES THE DESIGN AND CONSTRUCTION OF THE GROUND WATER TREATMENT SYSTEM,

MONITORING WELLS, REINJECTION WELLS, ASSOCIATED PIPING, AND MISCELLANEOUS FACILITIES. THE ESTIMATED ANNUAL O&M COST IS $751,000. CURRENT ENGINEERING CONTROLS, INCLUDING THOSE ACTIONS REQUIRED IN THE CLOSURE PLAN FOR THE SLI LANDFILL, AND INSTITUTIONAL CONTROLS, SUCH AS WARNINGS ON NEW WELL INSTALLATIONS IN THE AREA, ARE INCLUDED AS PART OF THE REMEDY.

Item 38

REGION :5
SITE NAME :NATIONAL PRESTO INDUSTRIES
LOCATION :EAU CLAIRE, WI
NTIS REPORT #:EPA/ROD/R05-90/138
RCD DATE :900801
ABSTRACT :

THE 325-ACRE NATIONAL PRESTO INDUSTRIES SITE IS A FORMER MUNITIONS AND METAL-WORKING FACILITY IN EAU CLAIRE, CHIPPEWA COUNTY, WISCONSIN, ADJACENT TO THE TOWN OF HALLIE. FROM 1942 UNTIL 1945, THE SITE WAS GOVERNMENT-OWNED, CONTRACTOR-OPERATED, AND PRODUCED GUNPOWDER AND SMALL ARMS. FROM 1945 TO 1980, THE SITE WAS OWNED BY NATIONAL PRESTO INDUSTRIES (NPI). INITIAL OPERATIONS WERE FOR THE MANUFACTURE OF COOKWARE AND CONSUMER PRODUCTS, WHICH GENERATED WASTE STREAMS CONSISTING OF METALS, OILS, GREASE, AND SPENT SOLVENTS. ALSO, BEGINNING IN 1951, ARTILLERY SHELL FUSES, AIRCRAFT PARTS, AND METAL PROJECTILES WERE PRODUCED BY NPI UNDER A MILITARY CONTRACT. EARLY WASTE-HANDLING PRACTICES INCLUDED THE USE OF DRY WELLS AND SEEPAGE PITS WITH OVERFLOW FROM THE PITS PUMPED TO A SERIES OF LAGOONS, USED AS SETTLING AND PERCOLATION PONDS. A MAJOR WASTE STEAM GENERATED FROM THE DEFENSE-RELATED ACTIVITIES WAS A SPENT FORGE COMPOUND, COMPRISED OF MINERAL OIL, GRAPHITE, VOCS, AND ASPHALT, WHICH ACCOUNTS FOR MUCH OF THE SLUDGE IN THE BOTTOM OF ONE OF THE SETTLING PONDS. FROM 1966 TO 1969, THE SPENT FORGE COMPOUND WAS ALSO LANDFILLED ONSITE. SUBSEQUENTLY, THE SPENT FORGE COMPOUND WAS RECYCLED AS PART OF THE MANUFACTURING PROCESS. BASED ON THEIR INVESTIGATIONS, EPA REQUIRED NATIONAL PRESTO INDUSTRIES TO PROVIDE BOTTLED WATER TO AN AREA IN HALLIE, WHERE PRIVATE WELLS ARE CONTAMINATED OR THREATENED BY CONTAMINATION FROM CONFIRMED ONSITE SOURCES. THIS RECORD OF DECISION (ROD) PROVIDES FOR A PERMANENT ALTERNATE WATER SUPPLY TO ADDRESS THE PRINCIPAL THREAT POSED BY THE GROUND WATER CONTAMINATION AT THE SITE. FUTURE OPERABLE UNITS WILL ADDRESS SOURCE CONTROL AND GROUND WATER REMEDIATION. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE GROUND WATER INCLUDE VOCS SUCH AS PCE AND TCE.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES CONSTRUCTING A WELL FIELD, STORAGE FACILITIES AND DISTRIBUTION SYSTEM TO SUPPLY WATER TO THE BUSINESSES AND RESIDENCES WITHIN THE AFFECTED AREA OF THE HALLIE SANITARY DISTRICT; EXTENDING MUNICIPAL WATER SERVICE FROM THE CITY OF EAU CLAIRE TO BUSINESSES AND RESIDENCES WITHIN THE AFFECTED AREA THAT HAVE ANNEXED TO EAU CLAIRE; CLOSING AND ABANDONING ALL EXISTING PRIVATE WELLS WITHIN THE AFFECTED AREA THAT DRAW FROM THE CONTAMINATED AQUIFER; AND ANNUAL MONITORING OF THE DESIGNATED PRIVATE WELLS IMMEDIATELY

OUTSIDE THE AFFECTED AREA THAT ARE STILL USED AS DRINKING WATER SUPPLY TO ENSURE CONTINUED QUALITY OF DRINKING WATER. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS BETWEEN $3,000,000 AND $3,200,000, WHICH INCLUDES AN ESTIMATED ANNUAL O&M COST OF BETWEEN $48,200 AND $120,000, DEPENDING ON THE SIZE AND EXTENT OF REMEDIATION REQUIRED. THE MOST LIKELY ANNUAL O&M COST IS $90,000.

PERFORMANCE STANDARDS OR GOALS: THE PRIMARY GOAL OF THE EPA AND THE STATE IS TO PROVIDE A PERMANENT AND SAFE ALTERNATE DRINKING WATER SUPPLY TO THE AFFECTED AREA.

REMEDY :

THE SELECTED REMEDY IS AN OPERABLE UNIT FOR AN ALTERNATE WATER SUPPLY WHICH ADDRESSES THE PRINCIPAL THREAT POSED BY THE SITE. FUTURE OPERABLE UNITS WILL ADDRESS SOURCE CONTROL AND GROUNDWATER REMEDIATION. THE MAJOR COMPONENTS OF THE SELECTED REMEDY ARE:

* CONSTRUCTION OF A WELL FIELD, STORAGE FACILITIES AND DISTRIBUTION SYSTEM TO SERVICE BUSINESSES AND RESIDENCES WITHIN THE AFFECTED AREA THAT ARE PART OF THE HALLIE SANITARY DISTRICT, FORMED BY PUBLIC SERVICE COMMISSION ORDER 2428-CW-100 DATED JUNE 14, 1990;
* EXTENSION OF MUNICIPAL WATER SERVICE FROM THE CITY OF EAU CLAIRE TO BUSINESSES AND RESIDENCES WITHIN THE AFFECTED AREA THAT HAVE ANNEXED TO EAU CLAIRE;
* CLOSURE AND ABANDONMENT OF ALL EXISTING PRIVATE WELLS WITHIN THE AFFECTED AREA THAT ARE FINISHED IN THE CONTAMINATED AQUIFER; AND
* ANNUAL MONITORING OF DESIGNATED PRIVATE WELLS IMMEDIATELY OUTSIDE THE AFFECTED AREA THAT ARE STILL USED AS A DRINKING WATER SUPPLY TO ENSURE CONTINUED QUALITY OF DRINKING WATER.

Item 39

REGION :5
SITE NAME :KUMMER SANITARY LANDFILL
LOCATION :NORTHERN TWP, MN
NTIS REPORT #:EPA/ROD/R05-90/134
ROD DATE :900929
ABSTRACT :

THE 35-ACRE KUMMER SANITARY LANDFILL SITE IS AN INACTIVE MIXED MUNICIPAL WASTE LANDFILL IN NORTHERN TOWNSHIP, BELTRAMI COUNTY, MINNESOTA, APPROXIMATELY ONE MILE WEST OF LAKE BEMIDJI. A LARGE RESIDENTIAL AREA LIES APPROXIMATELY 1,000 FEET EAST OF THE SITE, AND THERE IS A HOSPITAL DIRECTLY SOUTHWEST. THE PRIVATELY OWNED LANDFILL WAS OPERATED FROM 1971 UNTIL 1985; HOWEVER, BUSINESS RECORDS FOR THE SITE ARE VIRTUALLY NONEXISTENT. OPERATIONS AT THE LANDFILL CAUSED THE STATE TO TAKE A NUMBER OF ADMINISTRATIVE AND ENFORCEMENT ACTIONS. FOLLOWING THE DISCOVERY OF GROUND WATER CONTAMINATION IN THE NORTHERN TOWNSHIP IN 1984, THE STATE ISSUED A PUBLIC HEALTH ADVISORY CONCERNING THE WELL WATER AND PROVIDED A TEMPORARY WATER SUPPLY. TWO PREVIOUS RECORDS OF DECISION (RODS) IN 1985 AND 1988, DOCUMENTED THE PROVISION OF

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AN ALTERNATIVE WATER SUPPLY FOR THE NORTHERN MUNICIPAL WATER SYSTEM AS OPERABLE UNIT 1 (OU1), AND A SOURCE CONTROL OPERABLE UNIT (OU2), WHICH INCLUDED A COVER SYSTEM TO CONTROL THE SOURCE OF CONTAMINATION (OU3). THIS FINAL ROD ADDRESSES GROUND WATER CONTAMINATION. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE GROUND WATER ARE VOCS INCLUDING BENZENE, PCE, TCE, AND VINYL CHLORIDE.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES GROUND WATER PUMPING AND TREATMENT USING ADVANCED OXIDATION PROCESSES (E.G., OZONE, HYDROGEN PEROXIDE, OR ULTRAVIOLET LIGHT), AND LIME SODA SOFTENING, AS NECESSARY, TO PRECIPITATE ALKALINITY AND OTHER INORGANIC COMPOUNDS, FOLLOWED BY DISPOSAL OF THE PRECIPITATE SLUDGE, POLISHING THE EFFLUENT STREAM WITH GRANULATED ACTIVATED CARBON, AND DISCHARGING TREATED GROUND WATER TO AN ONSITE INFILTRATION POND; AND GROUND WATER MONITORING. TREATABILITY STUDIES FOR BIOREMEDIATION AS A MORE COST-EFFECTIVE REMEDY ARE PLANNED; HOWEVER, THE ROD WILL BE AMENDED IF THE TREATMENT IS CHANGED TO BIOTREATMENT. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $1,800,000-$6,200,000, WHICH INCLUDES AN ANNUAL O&M COST OF $240,000-$510,000 FOR 30 YEARS.

PERFORMANCE STANDARDS OR GOALS; CONTAMINANTS OF CONCERN IN THE GROUND WATER WILL BE REDUCED TO MEET CURRENT AND PROPOSED MAXIMUM CONTAMINANT LEVELS (MCLS) INCLUDING PCE 5 UG/L (PROPOSED MCL), TCE 5 UG/L (MCL), AND BENZENE 5 UG/L (MCL); THEREBY, REDUCING CUMULATIVE RESIDUAL CARCINOGENIC RISK DUE TO INGESTION TO (10-6).

REMEDY :
THIS OPERABLE UNIT IS THE FINAL ACTION OF THREE OPERABLE UNITS FOR THE SITE. THE FIRST OPERABLE UNIT AT THIS SITE INVOLVED INSTALLATION OF A MUNICIPAL DRINKING WATER SYSTEM. THE SECOND OPERABLE UNIT INVOLVED A FINAL COVER FOR THE LANDFILL. THE THIRD OPERABLE UNIT INVOLVES THE CONTAMINATED GROUNDWATER. THE SELECTED REMEDY CONSISTS OF THE FOLLOWING COMPONENTS;

* EXTRACTION OF CONTAMINATED GROUNDWATER
* TREATMENT OF CONTAMINATED GROUNDWATER BY ADVANCED OXIDATION PROCESSES
* DISCHARGE OF TREATED GROUNDWATER USING AN INFILTRATION POND

Item 40

REGION :5
SITE NAME :CARTER INDUSTRIALS, INC
LOCATION :DETROIT, MI
NTIS REPORT #:EPA/ROD/R05-91/169
ROD DATE :910918
ABSTRACT :
THE 3.5-ACRE CARTER INDUSTRIALS SITE IS A FORMER SCRAP METAL STORAGE AND SALVAGE OPERATION IN DETROIT, MICHIGAN. SURROUNDING LAND USE IS MIXED RESIDENTIAL AND LIGHT INDUSTRIAL IN AN URBAN SETTING. ONSITE FEATURES INCLUDE SEVERAL BUILDINGS, TWO SHELTERS, AN INCINERATOR, A 1,000-GALLON UNDERGROUND GASOLINE STORAGE TANK, AND SEVEN PILES CONSISTING OF APPROXIMATELY 46,000 CUBIC YARDS OF PCB-CONTAMINATED SOIL

AND DEBRIS. FROM 1966 UNTIL 1986, THE SITE WAS USED AS A SCRAP METAL SALVAGE AND STORAGE FACILITY, CHANGING OWNERSHIP SEVERAL TIMES DURING THE PERIOD. ITEMS ACCEPTED FOR SALVAGE INCLUDED ELECTRICAL CAPACITORS AND TRANSFORMERS. DURING SALVAGE OPERATIONS, DIELECTRIC FLUID CONTAINING PCBS WAS SPILLED FROM THE CAPACITORS AND TRANSFORMERS DIRECTLY ONTO THE ONSITE SOIL. ADJACENT COMMERCIAL, RESIDENTIAL, AND MUNICIPAL PROPERTIES HAVE BEEN CONTAMINATED BY DIRECT RUNOFF OF SPILLED MATERIAL, STORM WATER RUNOFF, WIND-BLOWN DUST, AND TRACKING OF SPILLED MATERIAL BY VEHICLES. IN 1986, THE STATE IDENTIFIED ELEVATED LEVELS OF PCBS IN ONSITE SOIL, WHICH WAS LATER CONFIRMED BY EPA INVESTIGATIONS. CONSEQUENTLY, IN 1986, AS PART OF A REMOVAL ACTION, EPA STABILIZED THE SITE BY DIVERTING SURFACE WATER RUNOFF TO ONSITE INTERCEPTION TRENCHES AND A TREATMENT SYSTEM; EXCAVATING AND CONSOLIDATING ONSITE CONTAMINATED SOIL AND DEBRIS ALONG WITH OFFSITE RESIDENTIAL DEBRIS INTO SEVEN ONSITE PILES; DECONTAMINATING AND DISPOSING OF DEBRIS OFFSITE; DECONTAMINATING ALLEYS AND STREETS WITHIN A 4-SQUARE BLOCK AREA; AND FENCING THE SITE. ALSO IN 1986, THE STATE REMOVED AND DISPOSED OF ALL PCB-CONTAMINATED SOIL WITH LEVELS BETWEEN 10 TO 50 MG/KG FROM SURROUNDING RESIDENTIAL AREAS OFFSITE. IN 1989, THE PRPS COVERED ONSITE PILES OF CONTAMINATED MATERIAL WITH GEOTEXTILE AND VEGETATIVE COVER TO PROVIDE TEMPORARY CONTAINMENT. THIS RECORD OF DECISION (ROD) ADDRESSES REMEDIATION OF REMAINING ONSITE AND OFFSITE SOURCE MATERIAL. A SUBSEQUENT ROD WILL ADDRESS THE NEED FOR REMEDIATION OF CONTAMINATED SEWER LINES RUNNING FROM THE SITE. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL AND DEBRIS ARE ORGANICS INCLUDING PCBS; AND METALS INCLUDING ARSENIC, CADMIUM, AND LEAD.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES EXCAVATING APPROXIMATELY 46,000 CUBIC YARDS OF ONSITE AND OFFSITE SOIL CONTAMINATED WITH GREATER THAN 1 MG/KG PCBS; TREATING ONSITE AND OFFSITE SOIL AND DEBRIS WITH GREATER THAN 10 MG/KG PCBS ONSITE USING LOW TEMPERATURE THERMAL DESORPTION, AND SOLIDIFYING ANY MATERIAL THAT FAILS THE TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP); DISPOSING OF ALL ONSITE AND OFFSITE MATERIAL CONTAMINATED WITH PCBS 1 MG/KG TO 10 MG/KG, INCLUDING ALL TREATMENT RESIDUALS WITH LESS THAN 10 MG/KG PCBS IN AN ONSITE CONTAINMENT CELL WITH A CLAY AND SOIL COVER; DISPOSING OF ANY MATERIAL THAT CANNOT MEET THE ABOVE ONSITE DISPOSAL CRITERIA OFFSITE; INSTALLING A LEACHATE COLLECTION AND PUMPOUT SYSTEM IN THE CONTAINMENT CELL; DECONTAMINATING AND DEMOLISHING THREE ONSITE BUILDINGS, AND CONTAINING THE DECONTAMINATED DEBRIS IN THE CELL; REMOVING AN UNDERGROUND STORAGE TANK AND ITS CONTENTS, WITH OFFSITE TREATMENT OR DISPOSAL OF THE CONTENTS, AND ONSITE DECONTAMINATION AND OFFSITE DISPOSAL OF THE TANK; EXCAVATING AND TREATING TANK-CONTAMINATED SOIL; MONITORING LEACHATE AND AIR; AND IMPLEMENTING INSTITUTIONAL CONTROLS INCLUDING DEED RESTRICTIONS, AND SITE ACCESS RESTRICTIONS SUCH AS FENCING. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $19,508,000. THERE ARE NO O&M COSTS ASSOCIATED WITH THIS REMEDIAL ACTION.

PERFORMANCE STANDARDS OR GOALS; THE CLEAN-UP GOAL OF 1 MG/KG PCBS IN SOIL AND DEBRIS IS BASED ON EPA GUIDANCE ON REMEDIAL ACTIONS FOR SUPERFUND SITES WITH PCB CONTAMINATION. ALL SOIL AND DEBRIS WITH GREATER THAN 10 MG/KG PCBS WILL BE TREATED ONSITE. SOIL AND TREATMENT

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RESIDUALS WITH 1 TO 10 MG/KG PCBS WILL BE CONTAINED ONSITE. SOIL CLEAN-UP LEVELS FOR METAL CONTAMINANTS ARE BASED ON LEACHABILITY TESTING (OR DETECTION LIMITS) AND INCLUDE ARSENIC 50 UG/KG, CADMIUM 80 UG/KG, AND LEAD 100 UG/KG. AN ARAR WAIVER WILL BE INVOKED FOR THE MICHIGAN SOLID WASTE MANAGEMENT RULE THAT SPECIFIES ISOLATION DISTANCES FOR SANITARY LANDFILLS.

REMEDY :

THIS RESPONSE ACTION ADDRESSES REMEDIATION OF PCB CONTAMINATED SOIL, DEBRIS AND BUILDINGS AT THE CARTER SITE. THE PRINCIPAL THREATS POSED BY CONDITIONS AT THE SITE INCLUDE INHALATION OF VOLATILIZED PCBS AND FUGITIVE DUST AND DERMAL CONTACT WITH CONTAMINATED MATERIALS. THE SELECTED REMEDY WILL ELIMINATE THESE THREATS.

THE MAJOR COMPONENTS OF THE SELECTED RESPONSE ALTERNATIVE INCLUDE;

* EXCAVATION OF ALL ON-SITE AND OFF-SITE SOILS CONTAMINATED WITH PCBS AT LEVELS OVER 1 MG/KG;
* DESIGN AND IMPLEMENTATION OF LOW TEMPERATURE THERMAL DESORPTION (LTTD) OF THE ON-SITE AND OFF-SITE SOIL AND DEBRIS CONTAMINATED WITH PCBS AT LEVELS GREATER THAN 10 MG/KG. THIS TREATMENT PROCESS MUST REDUCE THE LEVEL OF PCB IN THE SOLID RESIDUAL TO LESS THAN OR EQUAL TO 10 MG/KG FOR ON-SITE DISPOSAL OF RESIDUAL. ANY TCLP HAZARDOUS RESIDUAL MATERIAL SHALL BE SOLIDIFIED SUCH THAT IT IS NO LONGER HAZARDOUS PRIOR TO ON-SITE CONTAINMENT.
* DESIGN AND INSTALLATION OF A CONTAINMENT CELL ON THE CARTER SITE TO CONTAIN ALL MATERIAL CONTAINING BETWEEN 1 MG/KG AND 10 MG/KG PCB. THIS WOULD INCLUDE MATERIAL THAT WAS EXCAVATED FROM THE ADJACENT NEIGHBORHOOD AND FROM THE SITE WHICH CONTAINED 1 - 10 MG/KG PCB AND WAS NOT TO BE TREATED USING LTTD - AND THE SOLID RESIDUAL FROM THE LTTD TREATMENT SYSTEM CONTAINING LESS THAN 10 MG/KG PCB AFTER TREATMENT. OFF-SITE DISPOSAL IS REQUIRED FOR ANY MATERIAL NOT MEETING THE CRITERIA FOR ON-SITE CONTAINMENT;
* THE ON-SITE CELL WOULD BE CONSTRUCTED AS REQUIRED TO IMPEDE THE LATERAL INFILTRATION OF GROUNDWATER INTO THE CONTAINMENT CELL AND THE MIGRATION OF LEACHATE OUT OF THE CONTAINMENT CELL. ADDITIONAL TECHNICAL REQUIREMENTS WOULD INCLUDE: A COMPACTED CLAY LINER; A LEACHATE COLLECTION AND PUMPOUT SYSTEM; A MONITORING SYSTEM CAPABLE OF DETECTING LEAKAGE FROM THE CELL; A FROST PROTECTIVE SOIL COVER AND DRAINAGE LAYER; ACCESS RESTRICTIONS, SUCH AS FENCING, AS NECESSARY TO MAINTAIN THE INTEGRITY OF THE CAP, AND A PERMANENT MARKER TO DEMARCATE THE ON-SITE CELL, MAINTENANCE ACTIVITIES, ROUTINE INSPECTIONS AND APPROPRIATE INSTITUTIONAL CONTROLS, SUCH AS DEED RESTRICTIONS, WOULD BE EMPLOYED TO ENSURE THE INTEGRITY OF THE CONTAINMENT STRUCTURE. THE CONTAINMENT CELL WILL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE RULES IMPLEMENTING MICHIGAN'S SOLID WASTE MANAGEMENT ACT (ACT 641) FOR LINED TYPE II SANITARY LANDFILLS.
* AIR MONITORING WILL BE REQUIRED FOR PURPOSES OF

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DETERMINING IF PCBS ARE VOLATILIZING OR IF THERE IS EXCESSIVE EMISSION OF PCBS ADSORBED TO PARTICULATES DURING REMEDIAL ACTIVITIES. DUST SUPPRESSION MEASURES WILL BE REQUIRED.

* DECONTAMINATION AND DEMOLITION OF THE THREE CONTAMINATED BUILDINGS ON THE SITE. THE DECONTAMINATED DEMOLITION DEBRIS WILL BE CONTAINED IN THE ON-SITE CONTAINMENT CELL;
* REMOVAL OF AN UNDERGROUND STORAGE TANK (UST) AND ITS CONTENTS IN ACCORDANCE WITH THE MICHIGAN UST REQUIREMENTS;
* MAINTENANCE OF ALL EXISTING SITE SAFETY MEASURES, INCLUDING FENCE, SECURITY GUARDS, OPERATION AND MAINTENANCE OF SURFACE WATER RUNOFF COLLECTION AND TREATMENT SYSTEM DURING REMEDIAL ACTIVITIES.

Item 41

REGION :5
SITE NAME :ORGANIC CHEM INC
LOCATION :GRANDVILLE, MI
NTIS REPORT #:EPA/ROD/R05-91/173
ROD DATE :910930
ABSTRACT :

THE 5-ACRE ORGANIC CHEMICALS SITE IS AN INACTIVE SOLVENT RECLAMATION AND CHEMICALS MANUFACTURING FACILITY IN GRANDVILLE, KENT COUNTY, MICHIGAN. THE SITE INCLUDES SEVERAL ONSITE BUILDINGS, STRUCTURES, ABOVE-GROUND STORAGE TANKS, AND DRUM STORAGE AREAS, A BOILER FACILITY, A WASTEWATER TREATMENT FACILITY, AND A SEEPAGE LAGOON. WETLANDS POTENTIALLY ARE LOCATED 1,900 FEET NORTHWEST OF THE SITE, AND THE GRAND RIVER IS LOCATED 0.95 MILES TO THE NORTH OF THE SITE. A SUCCESSION OF PETROLEUM-RELATED INDUSTRIES LEASED THE LAND FOR PETROLEUM REFINING FROM 1941 TO 1945, FOLLOWED BY TRANSPORT AND STORAGE OPERATIONS FROM 1945 TO 1966. ORGANIC CHEMICALS INC., (OCI) BEGAN SITE OPERATIONS IN 1968. COMPANY RECORDS SHOW THAT BETWEEN 1968 AND 1980, PROCESS WASTE AND COOLING WATER INCLUDING RCRA HAZARDOUS WASTES WERE DISCHARGED TO THE ONSITE SEEPAGE LAGOON. IN 1979, 2,200 GALLONS OF LACQUER THINNER WERE SPILLED ONTO THE GROUND ONSITE AND SUBSEQUENTLY, SOME OF THE SPILLED THINNER WAS RECOVERED AND DISPOSED OF ONSITE IN THE SEEPAGE LAGOON. IN 1980, DISCHARGES TO THE LAGOON CEASED, AND THE COMPANY INSTALLED A WASTEWATER PRETREATMENT SYSTEM, WHICH DISCHARGED WASTES TO THE SANITARY SEWER SYSTEM. SUBSEQUENTLY, IN 1981, THE SEEPAGE LAGOON SLUDGE WAS EXCAVATED AND DISPOSED OF OFFSITE. IN 1983, EPA DOCUMENTED ONSITE SOIL AND POTENTIAL GROUND WATER CONTAMINATION RESULTING FROM THE SOLVENT-CONTAMINATED SEEPAGE LAGOON. ADDITIONALLY, IN 1986, THE STATE DETERMINED THAT OCI WAS ILLEGALLY DISPOSING OF SLUDGE AND OTHER HAZARDOUS RESIDUALS FROM THE ONSITE SOLVENT RECOVERY OPERATIONS BY PLACING THESE INTO DRUMS OR ROLLOFF CONTAINERS ALONG WITH ROUTINE NON-HAZARDOUS WASTE MATERIALS. ANALYSIS OF THE DRUM AND CONTAINER CONTENTS AND SOIL SAMPLES FROM THE VICINITY OF THESE STORAGE UNITS REVEALED THE PRESENCE OF VOCS AND OTHER ORGANICS. DURING 1987, OCI, AS PART OF A VOLUNTARY INVESTIGATION, DISCOVERED AND REMOVED 150 BURIED

DRUMS CONTAINING SLUDGE AND LIQUID RESIDUES OFFSITE, AND IDENTIFIED FURTHER ONSITE SOIL CONTAMINATION. FEDERAL AND STATE INVESTIGATIONS HAVE DETERMINED THAT SITE CONTAMINATION HAS RESULTED FROM PAST OPERATION OF THE SEEPAGE LAGOON BY OCI, CHEMICAL SPILLS AT THE SITE AND PAST OIL-RELATED ACTIVITIES. EPA HAS DIVIDED THE REMEDIATION INTO TWO RESPONSE ACTIONS. THIS RECORD OF DECISION (ROD) ADDRESSES CONTAMINATION IN THE UPPER GROUND WATER SYSTEM, AS AN INTERIM REMEDY. A FUTURE ROD WILL CONSTITUTE THE FINAL RESPONSE AT THE SITE BY ADDRESSING THE REMAINING ONSITE GROUND WATER AND SOIL CONTAMINATION. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE GROUND WATER ARE VOCS INCLUDING BENZENE, TOLUENE, AND XYLENES; AND OTHER ORGANICS INCLUDING PAHS AND PESTICIDES.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES ONSITE PUMPING AND TREATMENT OF GROUND WATER USING A TREATMENT SYSTEM CONSISTING OF AN EQUALIZATION/SEDIMENTATION BASIN, TWO GRANULAR ACTIVATED CARBON VESSELS, AND AN AIR STRIPPER POLISHING UNIT; DISCHARGING THE TREATED WATER ONSITE TO THE GRAND RIVER; DISPOSING OF TREATMENT CARBON RESIDUALS IN AN OFFSITE LANDFILL; CONDUCTING A TREATABILITY STUDY AND PUMP TEST TO DETERMINE THE PROPER TREATMENT TRAIN AND PUMPING RATES; AND GROUND WATER MONITORING. THE ESTIMATED PRESENT WORTH COST FOR THIS INTERIM REMEDIAL ACTION IS $5,931,000, WHICH INCLUDES AN ANNUAL O&M COST OF $317,000.

PERFORMANCE STANDARDS OR GOALS; THIS REMEDIAL ACTION IS ONLY PART OF A TOTAL REMEDIAL ACTION AND WILL ATTAIN GROUND WATER CLEANUP ARARS DURING FUTURE RESPONSE ACTIONS.

REMEDY :

THIS ROD ADDRESSES A DISCRETE ACTION AT THE SITE. THE SELECTED REMEDY IS AN INTERIM ACTION REMEDY AND ADDRESSES THE GROUND WATER CONTAMINANT PLUME IN THE UPPER GROUND WATER SYSTEM AT THE SITE. THE SECOND OPERABLE UNIT WILL CONSTITUTE THE FINAL RESPONSE ACTION AT THE SITE ADDRESSING THE REMAINING GROUND WATER AND SOIL CONTAMINATION, WHICH ARE PRINCIPAL THREATS AT THE SITE. THE SELECTED REMEDY CONSISTS OF THE FOLLOWING COMPONENTS;

* INSTALL, OPERATE AND MAINTAIN AN INTERIM GROUND WATER EXTRACTION SYSTEM IN THE UPPER GROUND WATER SYSTEM CONSISTING OF, AT A MINIMUM, THREE EXTRACTION WELLS. INSTALL, OPERATE AND MAINTAIN A PHYSICAL-CHEMICAL GROUND WATER TREATMENT SYSTEM FOR THE INTERIM GROUND WATER ACTION.

Item 42

REGION :3
SITE NAME :HELEVA LANDFILL
LOCATION :COPLAY (IRONTON VILLAGE), PA
NTIS REPORT #:EPA/ROD/R03-91/124
ROD DATE :910930
ABSTRACT :

5-ACRE HELEVA LANDFILL SITE IS A FORMER SANITARY LANDFILL IN NORTH WHITEHALL TOWNSHIP, LEHIGH COUNTY, PENNSYLVANIA. LAND USE IN THE AREA IS PREDOMINANTLY RURAL WITH SCATTERED RESIDENCES. THE ESTIMATED 150

PEOPLE WHO RESIDE WITHIN ONE-QUARTER MILE OF THE SITE USED THE GROUND WATER UNDERLYING THE SITE AS THEIR DRINKING WATER SUPPLY PRIOR TO 1986. FROM 1967 TO 1981, THE HELEVA LANDFILL ACCEPTED MUNICIPAL AND INDUSTRIAL WASTES, WHICH INCLUDED LARGE VOLUMES OF LIQUID TCE. AS A RESULT OF HELEVA'S DENIED REQUESTS FOR SOLID WASTE PERMITS AND REFUSAL TO IMPLEMENT A STATE ORDERED BIOSTIMULATION PROJECT, THE STATE CLOSED THE LANDFILL IN 1981. A NUMBER OF SUBSEQUENT STATE INVESTIGATIONS REVEALED GROUND WATER CONTAMINATION BY VOCS, OTHER ORGANICS, AND DNAPLS AT LEVELS THAT EXCEEDED STATE AND FEDERAL GROUND WATER LIMITS. A 1985 RECORD OF DECISION (ROD) ADDRESSED ONSITE GROUND WATER CONTAMINATION AND PROVIDED FOR EXTENDING AN EXISTING WATER MAIN; CAPPING THE ENTIRE LANDFILL; CONSTRUCTING SURFACE WATER DIVERSIONS AND GAS VENTING SYSTEMS; CONSTRUCTING AN ONSITE GROUND WATER TREATMENT FACILITY; ESTABLISHING A PUMPING AND TREATING SYSTEM FOR THE CONTAMINATED NEARGRADIENT GROUND WATER; AND GROUND WATER SAMPLING AND MONITORING. CONSTRUCTION OF ALL OF THESE MAJOR REMEDIAL ACTIVITIES HAS BEEN COMPLETED EXCEPT FOR THE GROUND WATER EXTRACTION AND TREATMENT COMPONENT. THIS ROD AMENDS THE GROUND WATER COMPONENT BASED ON DATA FROM THE 1989 PREDESIGN STUDY WHICH DETERMINED THAT COLLECTION OF DOWNGRADIENT GROUND WATER IS TECHNICALLY FEASIBLE. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE GROUND WATER ARE VOCS INCLUDING BENZENE, PCE, TCE, TOLUENE, AND XYLENES.

THE AMENDED REMEDIAL ACTION FOR THIS SITE INCLUDES CONTINUING WITH THE SELECTED REMEDY FROM THE PREVIOUS ROD AND REPLACING THE GROUND WATER PORTION WITH EXTRACTING NEAR GRADIENT GROUND WATER TO CONTAIN THE HIGHLY CONTAMINATED DISSOLVED PLUME IMMEDIATELY IN THE VICINITY OF DNAPL CONTAMINATION IN THE GROUND WATER; PUMPING AND ONSITE TREATMENT OF THE DOWNGRADIENT PORTION OF THE AQUIFER, AND DISCHARGING THE TREATED GROUND WATER ONSITE TO SURFACE WATER. THE ESTIMATED PRESENT WORTH COST FOR THIS AMENDED REMEDIAL ACTION IS $40,950,000, WHICH INCLUDES AN ANNUAL O&M COST OF $1,848,000 FOR 30 YEARS.

PERFORMANCE STANDARDS OR GOALS; DOWNGRADIENT GROUND WATER WILL BE REMEDIATED TO STATE BACKGROUND LEVELS INCLUDING BENZENE 0.2 UG/L, PCE 0.03 UG/L, TCE 0.03 UG/L, AND TOLUENE 0.2 UG/L. THE STATE AND FEDERAL ARARS FOR REMEDIATION OF NEARGRADIENT GROUND WATER TO BACKGROUND LEVELS AND MCLS WILL BE WAIVED DUE TO TECHNICAL IMPRACTICABILITY.

REMEDY :

THE REMEDIAL ACTION SELECTED IN THE 1985 ROD CONSISTS OF;

* EXTENDING AN EXISTING WATER MAIN FROM IRONTON TO ORMROD
* CAPPING THE ENTIRE 25-ACRE LANDFILL ACCORDING TO RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) STANDARDS
* CONSTRUCTING SURFACE WATER DIVERSION AND GAS VENTING SYSTEMS
* CONDUCTING A PREDESIGN STUDY TO DELINEATE FULLY THE SOURCE OF CONTAMINATION AND DETERMINE SINKHOLE ACTIVITY
* PUMPING AND TREATING OF THE NEARGRADIENT GROUND WATER TO REDUCE THE SOURCE OF GROUND WATER CONTAMINATION
* CONSTRUCTING APPROPRIATE GROUND WATER TREATMENT FACILITIES SO THAT THE TREATED GROUND WATER MAY BE DISCHARGED TO NEARBY COPLAY CREEK.

DESCRIPTION OF THE AMENDED SELECTED REMEDY THE ORIGINAL SELECTED REMEDY REMAINS THE SAME EXCEPT FOR THE GROUND WATER PUMP AND TREATMENT

COMPONENT, WHICH IS AMENDED AS FOLLOWS;PUMP AND TREAT BOTH THE NEARGRADIENT GROUND WATER TO CONTAIN THE DISSOLVED PLUME ASSOCIATED WITH CONTAMINANTS IN THE FORM OF DENSE NON-AQUEOUS PHASE LIQUIDS (DNAPLS), AND THE DOWNGRADIENT GROUND WATER TO RESTORE THAT PORTION OF THE AQUIFER TO USEABILITY.

Item 43

REGION :5
SITE NAME :ENVIRO-CHEM CORP
LOCATION :ZIONSVILLE, IN
NTIS REPORT #:EPA/ROD/R05-91/161
ROD DATE :910607
ABSTRACT :
THE ENVIRO-CHEM SITE IS A FORMER WASTE RECOVERY/RECLAMATION/BROKERAGE FACILITY IN BOONE COUNTY, INDIANA. ADJACENT TO THE SITE IS ANOTHER SUPERFUND SITE, THE NORTHSIDE SANITARY LANDFILL (NSL) WHICH, PRIOR TO THIS RECORD OF DECISION (ROD) AMENDMENT, WAS TO BE REMEDIATED IN A COMBINED REMEDY FOR BOTH SITES. LAND USE IN THE AREA IS AGRICULTURAL TO THE SOUTH AND EAST, AND RESIDENTIAL TO THE NORTH AND WEST, WITH APPROXIMATELY 50 RESIDENCES LOCATED WITHIN ONE MILE OF THE SITES. RUNOFF FROM THE SITES IS COLLECTED IN A DITCH WHICH FLOWS OFFSITE AND EVENTUALLY EMPTIES INTO A RESERVOIR THAT PROVIDES APPROXIMATELY 6 PERCENT OF THE DRINKING WATER FOR THE CITY OF INDIANAPOLIS. ENVIRO-CHEM BEGAN OPERATIONS IN 1977 AS A RECOVERY/RECLAMATION/BROKERAGE FACILITY, ACCEPTING SOLVENTS, OILS AND OTHER WASTES FROM INDUSTRIAL CLIENTS. ACCUMULATION OF CONTAMINATED STORMWATER ONSITE, POOR MANAGEMENT OF THE DRUM INVENTORY, AND SEVERAL SPILLS LED TO STATE AND EPA INVESTIGATIONS OF THE SITE. BETWEEN 1977 AND 1981, THE STATE PERMITTED ENVIRO-CHEM TO DISPOSE OF PART OF ITS WASTE AT THE ADJACENT NSL. IN 1981, A CONSENT DECREE WAS ISSUED AGAINST ENVIRO-CHEM GIVING THEM UNTIL NOVEMBER 1982 TO COMPLY WITH ENVIRONMENTAL LAWS AND REGULATIONS. IN MAY 1982, THE STATE ORDERED ENVIRO-CHEM TO CLOSE AND ENVIRONMENTALLY SECURE THE SITE BECAUSE IT FAILED TO REDUCE HAZARDOUS WASTE INVENTORIES. SUBSEQUENTLY, TWO EMERGENCY REMOVAL ACTIONS WERE CONDUCTED TO REMOVE THE MAJOR SOURCES OF CONTAMINATION. FROM 1983 TO 1984, APPROXIMATELY 30,000 DRUMS, 220,000 GALLONS OF WASTE, AND 5,650 CUBIC YARDS OF SOIL AND SLUDGE WERE REMOVED OFFSITE AND TREATED. IN 1985, 20,000 GALLONS OF CONTAMINATED WATER WERE REMOVED. A 1987 ROD PROVIDED A COMBINED REMEDY FOR BOTH NSL AND ENVIRO-CHEM DUE TO THEIR PROXIMITY AND OTHER SIMILARITIES. THE 1987 ROD ADDRESSED SOURCE CONTROL THROUGH SOIL EXCAVATING, DEWATERING, AND ONSITE DISPOSAL, FOLLOWED BY CAPPING; PUMPING AND ONSITE TREATMENT OF GROUND WATER; AND IMPLEMENTING DEED AND ACCESS RESTRICTIONS. HOWEVER, SINCE THE SIGNING OF THE ROD, EPA AND THE STATE HAVE BEEN ENGAGED IN NEGOTIATING WITH THE PRPS FOR EACH SITE. THESE NEGOTIATIONS HAVE RESULTED IN SEPARATE, COMPLEMENTARY REMEDIES AND INDIVIDUAL CONSENT DECREES FOR EACH SITE, AND MODIFICATIONS TO THE ORIGINAL SELECTED REMEDY. THIS ROD AMENDS THE 1987 ROD AND PROVIDES A COMPREHENSIVE SITE REMEDY FOR THE ENVIRO-CHEM SITE ADDRESSING SOURCE CONTROL INSTEAD OF GROUND WATER REMEDIATION. THE

PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL ARE VOCS INCLUDING PCE, TCE, TOLUENE; AND OTHER ORGANICS INCLUDING PHENOLS.

THE AMENDED REMEDIAL ACTION FOR THIS SITE INCLUDES TREATING CONTAMINATED SOIL ONSITE USING SOIL VAPOR EXTRACTION WITH A GRANULATED ACTIVATED CARBON SYSTEM TO CONTROL THE EXTRACTED VAPOR, IF NECESSARY; AND IMPLEMENTING A CONTINGENT REMEDY FOR A SUBSURFACE GROUND WATER COLLECTION AND TREATMENT SYSTEM, BASED ON MONITORING RESULTS, IF CLEAN-UP OBJECTIVES ARE NOT REACHED IN 5 YEARS. OTHER REMEDIAL ACTIONS DOCUMENTED IN THE 1991 ROD AMENDMENT INCLUDE CAPPING THE SITE, IMPLEMENTING SITE ACCESS RESTRICTIONS, AND MONITORING OF THE SUBSURFACE AND SURFACE WATER ARE NOT AFFECTED BY THIS AMENDMENT. THE ESTIMATED PRESENT WORTH FOR THIS REMEDIAL ACTION RANGES BETWEEN $5,000,000 AND $9,000,000. NO O&M COSTS WERE PROVIDED FOR THIS REMEDIAL ACTION.

PERFORMANCE STANDARDS OR GOALS; SOIL CLEAN-UP GOALS ARE BASED ON INGESTION OF SUBSURFACE WATER AT THE SITE BOUNDARY, AND ARE CALCULATED FROM THE ACCEPTABLE SUBSURFACE WATER CONCENTRATIONS ASSUMING A DILUTION OF LEACHATE TO SUBSURFACE WATER OF 1:196, AND USING ESTABLISHED PARTITION COEFFICIENTS. CHEMICAL-SPECIFIC SOIL CLEAN-UP GOALS INCLUDE PHENOL 9,800 UG/KG, TCE 240 UG/KG, PCE 130 UG/KG, TOLUENE 238,000 UG/KG, AND TOTAL XYLENES 195,000 UG/KG.

REMEDY :

THE PRIMARY REASON FOR AMENDING THE 1987 RECORD OF DECISION IS TO REFLECT THE DECISION TO IMPLEMENT SEPARATE, COMPLEMENTARY REMEDIES FOR THE ENVIRONMENTAL CONSERVATION AND CHEMICAL CORPORATION AND NORTHSIDE SANITARY LANDFILL SITES, INSTEAD OF THE ONE COMBINED REMEDY SELECTED IN THE 1987 RECORD OF DECISION, AND SECONDARILY, TO MODIFY THE SELECTED REMEDY.

FOR THE ENVIRONMENTAL CONSERVATION AND CHEMICAL CORPORATION SITE, THE MAJOR COMPONENTS OF THE REMEDIAL ACTION, AS MODIFIED, INCLUDE:

* SOIL VAPOR EXTRACTION, CONCENTRATION AND DESTRUCTION
* RCRA SUBTITLE C CAP
* ACCESS RESTRICTIONS
* SUBSURFACE AND SURFACE WATER MONITORING
* CONTINGENT SUBSURFACE WATER COLLECTION AND TREATMENT

Item 44

REGION :2
SITE NAME :UPPER DEERFIELD TOWNSHIP SANITARY LANDFILL
LOCATION :UPPER DEERFIELD TWP, NJ
NTIS REPORT #:EPA/ROD/R02-91/153
ROD DATE :910930
ABSTRACT :

THE 4-ACRE UPPER DEERFIELD TOWNSHIP SANITARY LANDFILL IS AN INACTIVE LANDFILL LOCATED ON A 27-ACRE TRACT OF LAND IN UPPER DEERFIELD TOWNSHIP, CUMBERLAND COUNTY, NEW JERSEY. LAND USE IN THE AREA IS PRIMARILY AGRICULTURAL. THE ESTIMATED 100 PEOPLE WHO LIVE WITHIN ONE MILE OF THE SITE MAINTAINED INDIVIDUAL WATER SUPPLY WELLS UNTIL THE EARLY 1980'S. FROM 1938 TO 1960, SEABROOK FARMS, INC., A VEGETABLE GROWING AND PROCESSING COMPANY, OPERATED THE PROPERTY AS A GRAVEL PIT, AND LATER AS

A WASTE DISPOSAL FACILITY FOR ITS VEGETATIVE WASTES. DURING THIS TIME, PESTICIDE RESIDUES AND CONTAINERS WERE ALLEGEDLY DISPOSED OF AT THE SITE. SINCE 1960, UPPER DEERFIELD TOWNSHIP HAS OWNED AND OPERATED THE FACILITY AS A MUNICIPAL SANITARY LANDFILL. A NUMBER OF STATE INVESTIGATIONS IDENTIFIED VOCS INCLUDING VINYL CHLORIDE, CHLORINATED SOLVENTS, AND MERCURY IN EXCESS OF FEDERAL DRINKING WATER STANDARDS IN GROUND WATER. IN 1983, UPPER DEERFIELD TOWNSHIP BEGAN TO SUPPLY AFFECTED RESIDENTS WITH BOTTLED WATER, AND IN 1986, THE TOWNSHIP INSTALLED A PUBLIC WATER SUPPLY WELL AND DISTRIBUTION SYSTEM. THIS RECORD OF DECISION (ROD) ADDRESSES GROUND WATER AND AIR. BECAUSE EPA INVESTIGATIONS SHOWED THAT THE GROUND WATER AND SOIL CONTAMINATION ASSOCIATED WITH THE SITE NO LONGER POSED A HEALTH THREAT UNDER CURRENT OR LIKELY LAND USE CONDITIONS, THERE ARE NO CONTAMINANTS OF CONCERN AFFECTING THIS SITE.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES NO FURTHER ACTION SINCE PREVIOUS INVESTIGATIONS INDICATED THAT GROUND WATER AND SOIL CONTAMINATION ASSOCIATED WITH THE SITE NO LONGER POSE A HEALTH THREAT UNDER CURRENT OR LIKELY FUTURE LAND USE CONDITIONS. HOWEVER, A COMPREHENSIVE GROUND WATER AND AIR MONITORING PROGRAM WILL BE IMPLEMENTED, WHICH WILL INCLUDE INSTALLING ADDITIONAL MONITORING WELLS AND SAMPLING DOWNGRADIENT RESIDENTIAL WELLS. IN ADDITION, SEDIMENT AND SURFACE WATER SAMPLING ALSO WILL BE CONDUCTED. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $2,360,000, WHICH INCLUDES AN ANNUAL O&M COST OF $154,000.

PERFORMANCE STANDARDS OR GOALS; NOT APPLICABLE.

REMEDY :

THE SELECTED ALTERNATIVE FOR THE UPPER DEERFIELD SITE IS TO TAKE NO FURTHER REMEDIAL ACTION, HOWEVER, A MONITORING PROGRAM OF THE AIR AND GROUND WATER WILL BE IMPLEMENTED. IN 1986, IN RESPONSE TO THE GROUND WATER CONTAMINATION PROBLEM, THE RESIDENTS OF UPPER DEERFIELD TOWNSHIP WERE CONNECTED TO A PUBLIC WATER SUPPLY SYSTEM, THUS REMOVING ANY IMMEDIATE HEALTH RISK AT THE TIME TO THE RESIDENTS POSED BY THE GROUND WATER. THIS ACTION WAS FUNDED BY THE STATE OF NEW JERSEY.
EPA CONDUCTED A REMEDIAL INVESTIGATION AT THE UPPER DEERFIELD SITE FROM 1987 TO 1990. THE RESULTS OF THE INVESTIGATION SHOWED THAT THE GROUND WATER AND SOIL CONTAMINATION ASSOCIATED WITH THE SITE NO LONGER POSE A HEALTH THREAT UNDER CURRENT OR LIKELY FUTURE LAND USE CONDITIONS. THEREFORE, NO ADDITIONAL ACTION IS REQUIRED PURSUANT TO CERCLA.
HOWEVER, SINCE GROUNDWATER CONTAMINATION DID EXIST IN THE VICINITY OF THE UPPER DEERFIELD TOWNSHIP SANITARY LANDFILL AND BECAUSE LOW LEVELS OF HAZARDOUS SUBSTANCES WILL REMAIN ON SITE, CONTINUED AIR AND GROUND WATER MONITORING IS NECESSARY.

Item 45

REGION :5
SITE NAME :FULTZ LDFL
LOCATION :BYESVILLE, OH
NTIS REPORT #:EPA/ROD/R05-91/183
ROD DATE :910930

ABSTRACTS FOR SANITARY LANDFILLS
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ABSTRACT :
THE 30-ACRE FULTZ LANDFILL SITE IS A PRIVATELY OWNED INACTIVE SANITARY LANDFILL ON THE NORTH SLOPE OF A RIDGE THAT OVERLIES ABANDONED COAL MINES IN JACKSON TOWNSHIP, GUERNSEY COUNTY, OHIO. LAND USE IN THE VICINITY OF THE SITE IS PRIMARILY RURAL TO THE SOUTH, NORTH, AND EAST; AND RESIDENTIAL AND LIGHT INDUSTRIAL TO THE WEST. THE SITE LIES WITHIN THE DRAINAGE BASIN OF WILLS CREEK, WHICH FLOWS NORTH ADJACENT TO THE SITE AND IS USED BY THE CITY OF CAMBRIDGE AS THE MUNICIPAL WATER SUPPLY. THE NORTHERN HALF OF THE LANDFILL LIES IN AN UNRECLAIMED STRIP MINE WHERE SURFACE MINE SPOIL AND NATURAL SOIL FORM A SHALLOW AQUIFER. THE SOUTHERN HALF OF THE LANDFILL LIES 25 TO 80 FEET ABOVE AN ABANDONED FLOODED UNDERGROUND MINE IN THE SAME COAL SEAM AS THE STRIP MINE. THE FLOODED UNDERGROUND MINE FORMS AN AQUIFER, WHICH ALSO IS UTILIZED FOR DRINKING WATER. SIX PONDS, DESIGNATED AS WETLANDS, ARE LOCATED ON THE NORTH SIDE OF THE LANDFILL IN THE AREA OF UNRECLAIMED STRIP MINE SPOIL. SURFACE WATER RUNOFF AND LEACHATE FROM THE LANDFILL COLLECT IN SEVERAL OF THESE PONDS. FROM 1958 TO 1968, THE LANDFILL WAS OPERATED AS AN OPEN DUMP. IN 1969, THE SITE WAS LICENSED BY THE COUNTY AND BEGAN TO ACCEPT HOUSEHOLD, COMMERCIAL, AND INDUSTRIAL SOLID WASTE. DURING THE 1970'S, THE LANDFILL OPERATOR WAS CITED FOR VARIOUS VIOLATIONS INCLUDING INADEQUATE DAILY COVER OF WASTE, RECEIVING UNAUTHORIZED WASTE, LEACHATE RUNOFF, BLOWING DEBRIS, AND OPEN DUMPING; AND IN 1985, ONSITE LANDFILL OPERATIONS CEASED. DISPOSAL RECORDS SHOW THAT AN ESTIMATED 6,240 DRUMS CONTAINING CHLORINATED AND NON-CHLORINATED SOLVENTS AND PLATING SLUDGE WERE DISPOSED OF IN THE LANDFILL. RECORDS ALSO SHOW THAT DRUMMED LIQUID AND SEMI-LIQUID WASTES WERE DISPOSED OF ONSITE, AND SOME OF THE SOLVENTS WERE POURED DIRECTLY ONTO THE GROUND AND BURNED. INVESTIGATIONS IN 1988 BY EPA INDICATED THAT GROUND WATER AND LEACHATE CONTAMINANTS EMANATING FROM THE SITE HAVE CONTAMINATED THE SHALLOW AQUIFER AND, TO A LESSER EXTENT, THE DEEP MINE AQUIFER. THIS RECORD OF DECISION (ROD) ADDRESSES ALL CONTAMINATED MEDIA, AND PROVIDES A FINAL REMEDY FOR THE SITE. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL, SEDIMENT, DEBRIS, GROUND WATER, AND SURFACE WATER ARE VOCS INCLUDING BENZENE, PCE, TCE, TOLUENE, AND XYLENES; OTHER ORGANICS INCLUDING PAHS AND PHENOLS; METALS INCLUDING ARSENIC, CHROMIUM, AND LEAD; AND OTHER INORGANICS.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES CONSTRUCTING A CONTAINMENT BERM AND CAPPING THE ENTIRE 30 ACRES OF THE LANDFILL WITH A MULTI-LAYER CAP; INSTALLING STRUCTURAL SUPPORTS FOR VOIDS IN THE UNDERGROUND MINE TO PREVENT CAP DAMAGE BY SUBSIDENCE; CONSTRUCTING AN ONSITE TREATMENT PLANT AND LEACHATE COLLECTION SYSTEM; PUMPING AND ONSITE TREATMENT OF CONTAMINATED GROUND WATER AND LEACHATE USING OXIDATION AND PRECIPITATION TO REMOVE METALS, AND FILTRATION AND CARBON ADSORPTION TO REMOVE ORGANICS, OR USING ANOTHER TREATMENT BASED ON THE OUTCOME OF A BENCH-SCALE TREATABILITY STUDY; DISCHARGING THE TREATED EFFLUENT ONSITE TO SURFACE WATER; REGENERATING SPENT CARBON OR DISPOSING OF THE CARBON OFFSITE; DISPOSING OF SLUDGE RESULTING FROM THE TREATMENT PLANT PROCESSES OFFSITE; CONSTRUCTING SURFACE WATER AND SEDIMENT CONTROLS TO DIVERT RUNOFF AWAY FROM THE LANDFILL; MITIGATING AFFECTED WETLANDS; PROVIDING AN ALTERNATE WATER SUPPLY FOR CONTAMINATED RESIDENTIAL WELLS BY CONNECTING THESE HOMES TO A MUNICIPAL WATER SUPPLY;

MONITORING SOIL, SEDIMENT, GROUND WATER, AND AIR; AND IMPLEMENTING INSTITUTIONAL CONTROLS INCLUDING DEED RESTRICTIONS TO LIMIT GROUND WATER AND LAND USE, AND SITE ACCESS RESTRICTIONS INCLUDING FENCING. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $19,480,700, WHICH INCLUDES AN ANNUAL O&M COST OF $210,000 FOR 30 YEARS.

PERFORMANCE STANDARDS OR GOALS; FOR GROUND WATER REMEDIATION, SITE-RELATED CONTAMINANTS THAT APPEAR UPGRADIENT WILL BE REDUCED TO THEIR RESPECTIVE BACKGROUND CONCENTRATIONS. OTHER NON-BACKGROUND CONTAMINANTS WILL BE REDUCED TO SDWA MCLS, OR TO A CUMULATIVE CARCINOGENIC RISK NO GREATER THAN (10-6) OR AN HI LESS THAN 1. DISCHARGE OF TREATED LEACHATE AND GROUND WATER MUST MEET CWA AND STATE REQUIREMENTS. CHEMICAL-SPECIFIC REMEDIATION GOALS WERE NOT PROVIDED.

REMEDY :

THE SELECTED REMEDIAL ACTION FOR THE FULTZ LANDFILL SITE ADDRESSES THE SOURCE OF CONTAMINATION BY CONTAINING THE LANDFILL CONTENTS AND TREATING CONTAMINATED GROUND WATER AND LEACHATE. THIS IS THE FIRST AND FINAL REMEDY FOR THE FULTZ LANDFILL SITE. THE MAJOR COMPONENTS OF THE SELECTED REMEDIAL ACTION INCLUDE;

* INSTITUTIONAL CONTROLS WILL BE SOUGHT TO REDUCE EXPOSURE TO SITE CONTAMINANTS THROUGH LEGAL RESTRICTIONS. IN THE EVENT THAT INSTITUTIONAL CONTROLS ARE NOT IMPLEMENTED, THE SELECTED REMEDIAL ACTION WILL BE REEVALUATED TO DETERMINE IF ADDITIONAL ACTIONS SHOULD BE IMPLEMENTED TO ENSURE THAT THE REMEDY IS PERMANENT AND EFFECTIVE ON THE LONG TERM BASIS.
* SITE FENCE APPROXIMATELY 10,000 FEET IN LENGTH, TO REDUCE DIRECT EXPOSURE TO SURFACE CONTAMINATION.
* ALTERNATE WATER SUPPLY FOR DOWNGRADIENT RESIDENTIAL WELLS IF FOUND TO PRESENT AN UNACCEPTABLE RISK, ATTRIBUTED TO THE SITE.
* LONG TERM MONITORING OF AIR, SURFACE AND GROUND WATER, LEACHATE, AND SEDIMENTS.
* SUBSURFACE STRUCTURAL SUPPORTS FOR MINE VOIDS, TO PREVENT CAP DAMAGE BY SUBSIDENCE, AND REDUCE BEDROCK FRACTURING BETWEEN THE LANDFILL AND COAL MINE AQUIFER.
* SURFACE WATER AND SEDIMENT CONTROLS TO ELIMINATE STANDING WATER AND DIVERT RUNOFF AWAY FROM THE LANDFILL.
* BERM AND MULTI-LAYER CAP TO REDUCE INFILTRATION, PREVENT EROSION, AND REDUCE HUMAN AND ENVIRONMENTAL HEALTH RISKS FROM DIRECT CONTACT WITH CONTAMINATED MATERIALS.
* LEACHATE COLLECTION SYSTEM TO REDUCE THE PRINCIPAL RISK BY REMOVING LEACHATE, WHICH IS CURRENTLY FLOWING FROM THE LANDFILL AT APPROXIMATELY 2 GALLONS PER MINUTE (GPM),
* EXTRACTION WELL SYSTEM TO REDUCE THE PRINCIPAL RISK BY INTERCEPTING CONTAMINATED GROUND WATER MIGRATING FROM THE LANDFILL THROUGH THE SHALLOW AQUIFER AND INTO THE COAL MINE AQUIFER.
* ON-SITE WATER TREATMENT SYSTEM TO ECONOMICALLY TREAT SIX MILLION GALLONS OF CONTAMINATED GROUNDWATER WHICH IS CURRENTLY BEING PRODUCED ANNUALLY, AND LEACHATE. IT WILL

BE MOST COST EFFECTIVE TO TREAT LEACHATE IN THE SAME SYSTEM USED TO TREAT GROUND WATER, RATHER THAN HAUL IT OFF-SITE.

* DISCHARGE OF TREATED WATER TO SURFACE WATER WILL BE IN ACCORDANCE WITH SUBSTANTIVE REQUIREMENTS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT.
* WETLANDS REPLACEMENT PLAN WHICH WILL RESTORE THE PONDS AND SURROUNDING HABITAT DISTURBED DURING REMEDIAL ACTION ACTIVITIES.

Item 46

REGION :2
SITE NAME :FIBERS PUBLIC SUPPLY WELLS
LOCATION :JOBOS, PR
NTIS REPORT #:EPA/ROD/R02-91/155
ROD DATE :910930
ABSTRACT :

THE 540-ACRE FIBERS PUBLIC SUPPLY WELLS SITE IS IN GUAYAMA, PUERTO RICO. THE SITE INCLUDES AN ACTIVE PHARMACEUTICAL PLANT (AWPI); TWO FORMER MANUFACTURING FACILITIES, ONE OF WHICH ENCOMPASSES TWO FORMER SETTLEMENT LAGOONS AND A SOIL DISPOSAL AREA; AND FIVE PUBLIC SUPPLY WELLS. LAND USE IN THE AREA IS MIXED AGRICULTURAL AND LIGHT INDUSTRIAL. THE SITE OVERLIES A CLASS II AQUIFER. IN ADDITION, THE CARIBBEAN SEA IS LOCATED 2 MILES SOUTH OF THE SITE. FROM 1966 TO 1976, FIBERS INTERNATIONAL CORPORATION (FIC) MANUFACTURED NYLON FIBERS ONSITE. FROM 1976 TO 1980, CHEVRON CHEMICAL COMPANY (CCCPR) EXPANDED THE OPERATIONS OF THE FIC PLANT TO INCLUDE THE PRODUCTION OF POLYPROPYLENE FIBERS. BOTH FIC AND CCCPR OPERATIONS USED ORGANIC SOLVENTS AND DEGREASING SOLVENTS IN THEIR ONSITE PROCESS. WASTEWATER CONTAINING THESE SOLVENTS WAS DIRECTED TO TWO SETTLING LAGOONS, THROUGH THE PROCESS SEWER SYSTEM FOR PRELIMINARY TREATMENT, BEFORE BEING PIPED TO AN OFFSITE BIOLOGICAL TREATMENT SYSTEM. FIC LINED THE LAGOONS IN 1969 TO REDUCE THE SEEPAGE OF TREATMENT WASTEWATER. IN 1978, CCCPR INSTALLED AN ONSITE SYSTEM FOR TREATING PROCESS AND SANITARY WASTEWATER, AND THE TREATED EFFLUENT WAS DIRECTED TO THE SETTLING LAGOONS BEFORE OFFSITE DISCHARGE TO THE SEA. CCCPR CEASED ONSITE OPERATIONS IN 1980. STATE AND PRIVATE SITE INVESTIGATIONS IN 1983 REVEALED THE PRESENCE OF ELEVATED LEVELS OF ORGANICS AND INORGANICS IN SOIL AND GROUND WATER. BETWEEN 1984 AND 1985, AWPI REMODELED THE FACILITIES, AND IN 1985 BEGAN PHARMACEUTICAL MANUFACTURING OPERATIONS. ALSO IN 1985, AWPI EXCAVATED PORTIONS OF THE SETTLING LAGOONS AND ENLARGED THE STORMWATER RETENTION POND TO ENCOMPASS THE LAGOON AREA. AWPI EXCAVATED 2,500 CUBIC YARDS OF THE LAGOON SLUDGE AND ASBESTOS-CONTAMINATED LINER MATERIAL, AND DEPOSITED THE MATERIAL AT AN ONSITE SOIL DISPOSAL AREA. THIS RECORD OF DECISION (ROD) ADDRESSES A FINAL REMEDY FOR SOURCE CONTAMINATION IN THE SOIL DISPOSAL AREA AND GROUND WATER. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL, DEBRIS, AND GROUND WATER ARE VOCS INCLUDING PCE AND TCE; OTHER ORGANICS; METALS INCLUDING CHROMIUM AND LEAD; AND OTHER INORGANICS INCLUDING ASBESTOS.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES EXCAVATING 9,010 CUBIC YARDS OF CONTAMINATED MATERIAL FROM THE SOIL DISPOSAL AREA AND TRANSPORTING THE SOIL OFFSITE TO A LANDFILL AUTHORIZED TO ACCEPT ASBESTOS; CONDUCTING SOIL SAMPLING; CONTROLLING DUST DURING REMEDIATION TO PREVENT EXPOSURE AND TO PROTECT WORKERS AND THE LOCAL COMMUNITY DURING THE TRANSPORTATION OF ASBESTOS-CONTAINING MATERIAL (ACM); RESTORING AND COVERING THE EXCAVATED AREA WITH 6 INCHES OF FILL AND 6 INCHES OF TOP FOLLOWED BY REVEGETATING THE AREA; ONSITE PUMPING AND TREATMENT OF THE 200-ACRE CONTAMINATED GROUND WATER PLUME FROM FIVE RECOVERY WELLS USING FILTRATION AND AIR STRIPPING, AND DISCHARGING THE TREATED WATER ONSITE TO A NEARBY IRRIGATION CANAL TO RECHARGE THE AQUIFER; AND INSTALLING MONITORING WELLS NEAR THE COASTLINE TO MONITOR POTENTIAL SALT WATER ENCROACHMENT. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $6,686,591, WHICH INCLUDES AN ANNUAL O&M COST OF $270,868 FOR 30 YEARS.

PERFORMANCE STANDARDS OR GOALS: SOIL GOALS FOR ASBESTOS ARE BASED ON NESHAPS UNDER THE CAA, WHICH CONSIDER THAT MATERIALS CONTAINING ASBESTOS IN CONCENTRATIONS EXCEEDING 1 PERCENT BE REGARDED AS ACM GROUND WATER CLEAN-UP GOALS ARE BASED ON STATE AND FEDERAL MCLS. GOALS FOR SOIL INCLUDE ASBESTOS 1 PERCENT BY VOLUME. CHEMICAL-SPECIFIC GROUND WATER GOALS INCLUDE PCE 0.005 MG/L (MCL) AND TCE 0.005 MG/L (MCL). EPA MAY INVOKE AN ARAR WAIVER FOR GROUND WATER IF THE REMEDIATION PROGRAM INDICATES THAT REACHING MCLS IN THE AQUIFER IS TECHNICALLY IMPRACTICABLE.

REMEDY :

THE REMEDIAL ALTERNATIVE PRESENTED IN THIS DOCUMENT IS THE ONLY OPERABLE UNIT FOR THE SITE. IT FOCUSES ON GROUNDWATER CONTAMINATION AS WELL AS SOIL CONTAMINATION.

THE MAJOR COMPONENTS OF THE SELECTED REMEDY INCLUDE THE FOLLOWING:

* CONTAMINATED GROUNDWATER WILL BE PUMPED FROM FIVE RECOVERY WELLS AT A COMBINED FLOW RATE OF APPROXIMATELY 1,400 GPM. HOWEVER, THE ACTUAL PUMPING RATE WILL BE DETERMINED DURING THE REMEDIAL DESIGN (RD).
* THE TREATED GROUNDWATER WILL BE DISCHARGED TO THE PREPA IRRIGATION CANAL WHERE IT WILL ALSO SERVE TO RECHARGE THE AQUIFER UNLESS IT IS DETERMINED DURING THE RD STAGE THAT A MORE APPROPRIATE OPTION EXISTS FOR ALL OR PORTIONS OF THE TREATED GROUNDWATER. IN ANY EVENT, THE METHOD OF DISCHARGE MUST PROVIDE A BENEFICIAL USE OF THE WATER.
* SEDIMENT/PARTICULATE FILTRATION AND AIR STRIPPING WILL BE INSTALLED TO REMOVE VOLATILE ORGANIC COMPOUNDS (VOCS).
* A LONG-TERM MONITORING PROGRAM WILL BE IMPLEMENTED TO TRACK THE MIGRATION AND CONCENTRATIONS OF THE CONTAMINANTS OF CONCERN AND ASSESS PERFORMANCE OF THE GROUNDWATER EXTRACTION WELLS.
* CHLORIDE MONITORING WELLS WILL BE INSTALLED NEAR THE COASTLINE TO MONITOR POTENTIAL SALT WATER MOVEMENT.
* A SYSTEM MONITORING PROGRAM WILL BE IMPLEMENTED WHICH INCLUDES THE COLLECTION AND MONTHLY ANALYSIS OF INFLUENT AND EFFLUENT FROM THE AIR STRIPPING TOWER AND PERIODIC

COLLECTION OF WELL-HEAD SAMPLES.

* EPA MAY INVOKE A TECHNICAL WAIVER OF THE ARARS IF THE REMEDIATION PROGRAM INDICATES THAT REACHING MAXIMUM CONTAMINANT LEVELS (MCLS) IN THE AQUIFER IS TECHNICALLY IMPRACTICABLE.
* THE SOIL DISPOSAL AREA WILL BE EXCAVATED AND THE CONTAMINATED SOILS WILL BE TRANSPORTED TO AN AUTHORIZED LANDFILL FOR DISPOSAL.
* DUST CONTROL AND WORKER HEALTH AND SAFETY MEASURES WILL BE TAKEN THROUGHOUT THE EXCAVATION PROCESS.
* THE SOIL DISPOSAL AREA WOULD BE RESTORED ONCE EXCAVATION ACTIVITIES ARE COMPLETED.

Item 47

REGION :5
SITE NAME :PINE BEND SAN LDFL
LOCATION :INVER GROVE HEIGHTS, MN
NTIS REPORT #:EPA/ROD/R05-91/178
ROD DATE :910930
ABSTRACT :

THE PINE BEND SANITARY LANDFILL SITE IS LOCATED 1 MILE EAST OF THE MISSISSIPPI RIVER IN INVER GROVE HEIGHTS, DAKOTA COUNTY, MINNESOTA. LAND USE IN THE AREA IS RESIDENTIAL AND INDUSTRIAL. THE TERRAIN IS GENERALLY FLAT AND CONTAINS AN IMMATURE DRAINAGE SYSTEM RESULTING IN ONSITE NUMEROUS PONDS AND WETLANDS. THE SITE IS COMPOSED OF TWO LANDFILLS: THE 255-ACRE ACTIVE PINE BEND SANITARY LANDFILL (PBSL) AND THE INACTIVE 52-ACRE CROSBY AMERICAN DEMOLITION LANDFILL (CADL). PBSL BEGAN OPERATION IN 1971 AS A MIXED MUNICIPAL SOLID WASTE FACILITY. CADL ACCEPTED COMPRESSED BALES OF MUNICIPAL SOLID WASTES FROM 1971 TO 1974, AND LATER, FROM 1976 TO 1989 ALSO ACCEPTED DEMOLITION WASTES. HYDROGEOLOGIC DATA FROM THE SITE SHOW THAT THE TWO LANDFILLS ARE CONSIDERED ONE SITE BECAUSE THEIR GROUND WATER PLUMES COMMINGLE WITHIN A COMMON SURFICIAL AQUIFER. THE RESULTING PLUME MOVES THROUGH THE SURFICIAL AQUIFER AND IS BELIEVED TO EVENTUALLY DISCHARGE TO THE MISSISSIPPI RIVER VIA SPRINGS IN THE RIVER BOTTOM. IN 1983, ELEVATED LEVELS OF VOCS WERE DETECTED IN THE SURFICIAL GROUND WATER BENEATH THE SITE, AND LOW LEVELS OF VOCS WERE IDENTIFIED IN NUMEROUS DOWNGRADIENT COMMERCIAL AND RESIDENTIAL WELLS. THIS CONTAMINATION IS BELIEVED TO BE THE RESULT OF PRECIPITATION INFILTRATING THROUGH THE PERMEABLE LANDFILL MATERIAL AND COMING IN CONTACT WITH BURIED WASTE. SINCE 1986, AT THE REQUEST OF THE STATE, CADL HAS PROVIDED BOTTLED WATER TO RESIDENCES WITH CONTAMINATED WELLS TO MINIMIZE THE RISK OF VOC-CONTAMINATION MIGRATING FROM THE PBSL/CADL SITE. THIS RECORD OF DECISION (ROD) ADDRESSES GROUND WATER CONTAMINATION AS THE FIRST OF THREE OPERABLE UNITS (OUS). FUTURE RODS WILL ADDRESS SOURCE CONTROL AND FINAL REMEDIATION OF GROUND WATER. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SITE ARE VOCS INCLUDING BENZENE, PCE, TCE, AND TOLUENE.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES PROVIDING A PERMANENT ALTERNATIVE WATER SUPPLY BY EXTENDING THE EXISTING INVER GROVE

HEIGHTS MUNICIPAL WATER SUPPLY; CONNECTING IMPACTED OR POTENTIALLY IMPACTED PREMISES TO THE MUNICIPAL WATER SUPPLY; AND PERMANENTLY SEALING THE POTENTIALLY AFFECTED ONSITE PRIVATE WATER SUPPLY WELLS. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $2,649,499, WHICH INCLUDES AN ANNUAL O&M COST OF $30,350 FOR 30 YEARS.
PERFORMANCE STANDARDS OR GOALS: NOT APPLICABLE.
REMEDY :
THIS OPERABLE UNIT IS THE FIRST OF THREE OPERABLE UNITS FOR THE SITE. IT INVOLVES THE INSTALLATION OF A PERMANENT ALTERNATE WATER SUPPLY. THE SECOND OPERABLE UNIT INVOLVES SOURCE CONTROL FOR THE SITE. THE THIRD OPERABLE UNIT WILL ADDRESS THE CONTAMINATION THAT IS PRESENT IN THE GROUND WATER. THE COMBINATION OF THESE THREE DISCRETE ACTIONS ARE EXPECTED TO ADDRESS THE RELEASES AND THREATENED RELEASES AT THE SITE. THIS RECORD OF DECISION WILL IDENTIFY THE SELECTED REMEDY FOR THE FIRST OPERABLE UNIT ONLY. THE SECOND AND THIRD OPERABLE UNITS WILL EACH BE ADDRESSED IN THEIR RESPECTIVE RECORD OF DECISIONS AT A LATER DATE. THE SELECTED REMEDY FOR THE FIRST OPERABLE UNIT CONSISTS OF THE FOLLOWING COMPONENTS:

* THE EXTENSION OF THE EXISTING CITY OF INVER GROVE HEIGHTS MUNICIPAL WATER SUPPLY;
* THE CONNECTION OF IMPACTED OR POTENTIALLY IMPACTED PREMISES TO THE MUNICIPAL WATER SUPPLY;
* THE PERMANENT SEALING OF THE PRIVATE WATER SUPPLY WELLS WHICH PRESENTLY SERVE THE PREMISES THAT WILL BE CONNECTED TO THE MUNICIPAL WATER SUPPLY.

Item 48

REGION :5
SITE NAME :PAGEL'S PIT
LOCATION :ROCKFORD, IL
NTIS REPORT #:EPA/ROD/R05-91/165
ROD DATE :910628
ABSTRACT :
THE 100-ACRE PAGEL'S PIT SITE IS AN ACTIVE SANITARY LANDFILL FACILITY IN A PREDOMINANTLY RURAL AREA OF WINNEBAGO COUNTY, ILLINOIS. SURROUNDING LAND USE IS MIXED AGRICULTURAL, RURAL RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL. THE SITE IS BOUNDED ON THE WEST BY KILLBUCK CREEK. ANOTHER SUPERFUND SITE, ACME SOLVENT RECLAIMING, INC., IS LOCATED EAST AND UPGRADIENT OF PAGEL'S PIT. THE ACME SOLVENT SITE HAS BEEN SHOWN TO HAVE CONTAMINATED THE GROUND WATER IN THE DOWNGRADIENT DIRECTION. THE LANDFILL AT THE PAGEL'S PIT SITE IS A FORMER SAND AND GRAVEL QUARRY WITH A SEALED ASPHALT LINER THAT COVERS ABOUT 47 ACRES. THE LANDFILL, WHICH BEGAN OPERATING IN 1972, ACCEPTED PRIMARILY MUNICIPAL WASTE, SEWAGE SLUDGE, AND LIMITED AMOUNTS OF ILLINOIS SPECIAL WASTES. BEGINNING IN 1980, A NETWORK OF GAS EXTRACTION WELLS WAS INSTALLED TO REMOVE LANDFILL GAS THAT IS GENERATED BY THE WASTES. GAS COLLECTED FROM THE WELLS IS USED AS A FUEL SOURCE FOR A SLUDGE DRYING OPERATION. SOME OF THESE WELLS ALSO ARE USED FOR LEACHATE COLLECTION ALONG WITH THE MANHOLES INSTALLED IN THE LANDFILL. IN 1990, IT WAS

ESTIMATED THAT THE LANDFILL CONTAINED ABOUT 4,700,000 CUBIC YARDS OF WASTE AND HAD 5 TO 7 YEARS OF OPERATING CAPACITY REMAINING. IT HAS BEEN DETERMINED THAT THE LANDFILL HAS CAUSED CONTAMINATION OF THE GROUND WATER. THIS RECORD OF DECISION (ROD) ADDRESSES THE LANDFILL WASTES AND CONTAMINATED GROUND WATER AT THE DOWNGRADIENT SIDE OF THE SITE AS OPERABLE UNIT 1 (OU1). A FUTURE ROD WILL ADDRESS GROUND WATER CONTAMINATION IN THE SOUTHEAST CORNER OF THE SITE THAT IS UNDERGOING FURTHER STUDY. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE GROUND WATER ARE VOCS INCLUDING 1,2-DICHLOROETHENE AND VINYL CHLORIDE; AND METALS INCLUDING ARSENIC, BARIUM, MANGANESE, THALLIUM AND ZINC.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES CONSTRUCTING A SANITARY LANDFILL COVER FOR THE WASTE DISPOSAL AREA; PUMPING GROUND WATER ALONG THE WEST SIDE OF THE SITE; REMOVING INORGANICS BY TREATING WITH ION EXCHANGE OR COAGULATION/FLOCCULATION, IF NECESSARY, PRIOR TO ONSITE TREATMENT USING CARBON ADSORPTION OR AIR STRIPPING, FOLLOWED BY CARBON POLISHING OF THE TREATED WATER, WITH ONSITE DISCHARGE TO SURFACE WATER; REMOVING SPENT CARBON OFFSITE FOR REGENERATION OR DISPOSAL; EXTRACTING AND TREATING LEACHATE OFFSITE AT A PUBLICLY OWNED TREATMENT WORKS (POTW); EXTRACTING LANDFILL GAS AND USING THE GAS FOR FUEL, OR FLARING THE GAS; MONITORING GROUND WATER, LEACHATE, AND AIR; MAINTAINING ALL REMEDIAL ACTION COMPONENTS; AND IMPLEMENTING INSTITUTIONAL CONTROLS INCLUDING DEED RESTRICTIONS. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $9,800,000 OR $11,000,000, WHICH INCLUDES O&M COSTS OF $310,000 OR $248,000 FOR 30 YEARS, DEPENDING ON THE PROCESS SELECTED.

PERFORMANCE STANDARDS OR GOALS; GROUND WATER GOALS ARE BASED ON CURRENTLY PROMULGATED MCLS OR NON-ZERO MCLGS, EXCEPT FOR ARSENIC AND 1,1-DICHLOROETHENE, OR A RISK LEVEL OF (10-5) OR AN HI=1 FOR CONTAMINANTS WITHOUT MCLS. CHEMICAL-SPECIFIC GOALS WERE NOT PROVIDED.

REMEDY :

THIS REMEDY IS THE FIRST OF POTENTIALLY TWO OPERABLE UNITS AT THE SITE. IT PROVIDES FOR INTERCEPTION OF CONTAMINATED GROUNDWATER FOR THE PURPOSE OF PREVENTING IT FROM LEAVING THE SITE; USE OF CONTAMINATED GROUNDWATER AS A WATER SUPPLY POSED THE RISK IDENTIFIED AT THE SITE THAT EXCEEDED CRITERIA USED BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA). IT ALSO ADDRESSES THE WASTES CONTAINED AT THIS OPERATING SANITARY LANDFILL. THE GROUNDWATER WILL BE TREATED, THE WASTES WILL BE CONTAINED.

THE SECOND OPERABLE UNIT WILL ADDRESS CONTAMINATED GROUNDWATER LOCATED PRIMARILY ON THE PAGEL'S PIT SITE IN THE SOUTHEAST CORNER. THE POTENTIALLY RESPONSIBLE PARTIES (PRPS) WHO HAVE DONE THE REMEDIAL INVESTIGATION FOR THE PAGEL'S PIT SITE CONTEND THAT ANOTHER NATIONAL PRIORITIES LIST SITE, UPGRADIENT OF THE PAGEL'S PIT SITE, MAY CONTRIBUTE TO THIS CONTAMINATION.

THE MAJOR COMPONENTS OF THE SELECTED REMEDY INCLUDE;

* A SANITARY LANDFILL COVER FOR THE WASTE DISPOSAL AREA;
* GROUNDWATER EXTRACTION ALONG THE WEST SIDE OF THE SITE;
* ON-SITE GROUNDWATER TREATMENT BY CARBON ADSORPTION OR AIR STRIPPING FOLLOWING PRETREATMENT WITH A SOLIDS FILTER, WITH THE TREATED WATER BEING DISCHARGED TO SURFACE WATER;
* REMOVAL OF INORGANICS BY TREATMENT, IF NECESSARY, PRIOR TO

CARBON ADSORPTION OR AIR STRIPPING;
* LEACHATE EXTRACTION AND TRANSFER TO THE LOCAL PUBLICLY OWNED TREATMENT WORKS FOR TREATMENT;
* GAS EXTRACTION AND THE USE OF THE GAS FOR FUEL OR THE FLARING OF THE GAS;
* DEED RESTRICTIONS; AND
* SITE MONITORING AND MAINTENANCE OF ALL REMEDIAL ACTION COMPONENTS.

Item 49

REGION :9
SITE NAME :TELEDYNE SEMICONDUCTOR
LOCATION :MOUNTAIN VIEW, CA
NTIS REPORT #:EPA/ROD/R09-91/058
ROD DATE :910322
ABSTRACT :
THE TELEDYNE SEMICONDUCTOR SITE IS COMPRISED OF TWO SUPERFUND SITES: THE TELEDYNE SEMICONDUCTOR SITE, A SEMICONDUCTOR MANUFACTURING FACILITY, AND THE SPECTRA-PHYSICS SITE, A LASER AND RELATED COMPONENTS MANUFACTURING FACILITY, AND OFFSITE AREAS ASSOCIATED WITH A CONTAMINATED GROUND WATER PLUME IN MOUNTAIN VIEW, CALIFORNIA. LAND USE IN THE AREA IS PREDOMINANTLY COMMERCIAL AND INDUSTRIAL. THE SITE IS BORDERED BY PERMANENTE CREEK TO THE WEST AND THE CITY OF MOUNTAIN VIEW LANDFILL DEWATERING TRENCH TO THE NORTH. SINCE THE CONSTRUCTION OF PUBLIC WATER AND SEWER CONNECTIONS IN 1984, MOST PRIVATE WELLS HAVE BEEN ABANDONED; HOWEVER, EIGHT PRIVATE WELLS ARE CURRENTLY OPERATIONAL FOR RESIDENTIAL AND AGRICULTURAL USES. SINCE 1962, TELEDYNE SEMICONDUCTOR, INC. HAS OPERATED A SEMICONDUCTOR MANUFACTURING FACILITY ONSITE. FROM 1962 TO 1980, THE FACILITY USED TWO 1,400-GALLON UNDERGROUND SUMPS FOR ACID NEUTRALIZATION AND WASTE TCE COLLECTION, AND A 2,000-GALLON WASTE SOLVENT TANK (TANK A) FOR COLLECTION AND DISPOSAL OF LIQUID CHEMICAL WASTES ONSITE. IN 1980, ALL UNDERGROUND SOLVENT HANDLING ACTIVITIES WERE DISCONTINUED AND WASTE HOLDING AND DISPOSAL FACILITIES WERE MOVED ABOVE GROUND. SPECTRA-PHYSICS, INC. HAS MANUFACTURED LASERS AND ASSOCIATED COMPONENTS ONSITE SINCE 1963, AND HAS USED VOCS INCLUDING TCE AS PART OF THE MANUFACTURING PROCESSES. WASTEWATER AND RINSE WATER WERE DISCHARGED THROUGH FIVE BELOW-GRADE SUMPS INTO THE SANITARY WATER SYSTEM. FROM 1982 TO 1984, STATE INVESTIGATIONS IDENTIFIED THE RELEASE OF VOCS FROM SOLVENT TANKS INTO ONSITE SOIL AT BOTH AREAS. TELEDYNE AND SPECTRA-PHYSICS HAVE TOGETHER AND SEPARATELY IMPLEMENTED INTERIM ACTIONS ONSITE. TELEDYNE EXCAVATED AND REMOVED TANK A AND THE SURROUNDING CONTAMINATED SOIL, AND IN 1986, INSTALLED GROUND WATER EXTRACTION SYSTEMS ON AND AROUND THE SITE TO REMOVE VOCS PRESENT IN CONCENTRATIONS ABOVE SPECIFIED LEVELS AND DISCHARGE EXTRACTED WATER TO THE SANITARY SEWER SYSTEM. IN 1987, SPECTRA-PHYSICS EXCAVATED AND REMOVED ALL BUT ONE OF THE SUMPS AND SIX FEET OF CONTAMINATED SOIL FROM THE FACILITY AREA, AND INSTALLED A SOIL VAPOR EXTRACTION SYSTEM AS AN INTERIM REMOVAL ACTION TO REDUCE VOCS IN SOIL. THIS RECORD OF DECISION (ROD) ADDRESSES CONTAMINATION OF THE GROUND WATER AQUIFERS AND ONSITE SOIL. THE PRIMARY

CONTAMINANTS OF CONCERN AFFECTING THE SOIL AND GROUND WATER ARE VOCS INCLUDING PCE, TCE, TOLUENE, AND XYLENES.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES EXPANDING THE EXISTING SOIL VAPOR EXTRACTION SYSTEM AT THE SPECTRA-PHYSICS AREA INCLUDING TREATMENT OF OFF-GASSES USING GRANULAR ACTIVATED CARBON TO CONTROL AIR EMISSIONS; GROUND WATER PUMPING AND TREATMENT AT BOTH THE TELEDYNE AND SPECTRA-PHYSICS AREAS USING AIR STRIPPING FOLLOWED BY VAPOR PHASE CARBON TO CONTROL AIR EMISSIONS, IF THE AIR LEVELS EXCEED PERMITTED STANDARDS FOLLOWED BY DISCHARGING THE TREATED WATER INTO AN ONSITE STORM DRAIN; CONTINUING OPERATION OF THE EXISTING GROUND WATER EXTRACTION SYSTEMS AT THE OFFSITE MOUNTAIN VIEW AREA, WITH A CONTINGENCY FOR ADDING ADDITIONAL EXTRACTION WELLS AND TREATING EXTRACTED WATER USING AIR STRIPPING PRIOR TO DISCHARGE INTO THE CITY SEWER SYSTEM; AND SOIL AND GROUND WATER MONITORING. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION AT ONLY THE TELEDYNE AREA IS $2,000,000, WHICH INCLUDES AN ANNUAL O&M COST OF $86,000 FOR 30 YEARS. THE ESTIMATED PRESENT WORTH COST FOR THE SPECTRA-PHYSICS AREA IS $2,729,595, WHICH INCLUDES AN ANNUAL O&M COST OF $188,600. THE ESTIMATED PRESENT WORTH COST FOR MONITORING THE OFFSITE MOUNTAIN VIEW AREA IS $10,496,757, WHICH INCLUDES AN ANNUAL O&M COST OF $720,739 FOR 30 YEARS. THE ESTIMATED TOTAL PRESENT COST FOR THIS REMEDIAL ACTION IS $18,226,352, WHICH INCLUDES AN ANNUAL O&M COST OF $909,425 FOR 30 YEARS.

PERFORMANCE STANDARDS OR GOALS; SOIL WILL BE REMEDIATED TO MEET STATE STANDARDS AND REDUCE THE RISK OF ADDITIONAL GROUND WATER CONTAMINATION. CHEMICAL-SPECIFIC CLEAN-UP GOALS FOR SOIL INCLUDE PCE 5 UG/KG (STATE), TCE 5 UG/KG (STATE), AND TOLUENE 100 UG/KG (STATE). GROUND WATER WILL BE REMEDIATED TO MEET STATE AND FEDERAL MCLS OR MCLGS INCLUDING PCE 5 UG/L (MCL), TCE 5 UG/L (MCL), AND TOLUENE 100 UG/L (STATE).

REMEDY :

THE SELECTED REMEDY FOR THE TELEDYNE AND SPECTRA-PHYSICS SITES CONSISTS OF;

* SOIL VAPOR EXTRACTION FOR SOIL CLEANUP;
* GROUNDWATER EXTRACTION AND TREATMENT FOR GROUNDWATER CLEANUP;
* SHALLOW ZONE, INTERMEDIATE ZONE, AND DEEP AQUIFER GROUNDWATER MONITORING AS WELL AS SOIL MONITORING.

THESE REMEDIAL ACTIONS ADDRESS THE PRINCIPAL THREAT REMAINING AT THE TELEDYNE AND SPECTRA-PHYSICS SITES BY REMOVING AND PERMANENTLY DESTROYING THE CONTAMINANTS FROM SOILS AND REMOVING THE CONTAMINANTS FROM GROUND WATER, THEREBY SIGNIFICANTLY REDUCING THE TOXICITY, MOBILITY OR VOLUME OF HAZARDOUS SUBSTANCES IN BOTH MEDIA. THESE RESPONSE ACTIONS WILL GREATLY REDUCE THE POSSIBILITY OF CONTAMINATION OF EXISTING POTABLE WATER SUPPLIES AND POTENTIAL FUTURE WATER SUPPLIES.

Item 50

REGION :5
SITE NAME :NORTHSIDE SANITARY LDFL
LOCATION :ZIONSVILLE, IN

ABSTRACTS FOR SANITARY LANDFILLS
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NTIS REPORT #:EPA/ROD/R05-91/162
ROD DATE :910731
ABSTRACT :
THE NORTHSIDE SANITARY LANDFILL SITE IS A HAZARDOUS AND SOLID WASTE DISPOSAL FACILITY IN BOONE COUNTY, INDIANA. ADJACENT TO THE NORTHSIDE SANITARY LANDFILL (NSL) SITE IS ANOTHER SUPERFUND SITE, ENVIRO-CHEM WHICH, PRIOR TO THIS RECORD OF DECISION (ROD) AMENDMENT, WAS TO BE REMEDIATED IN A COMBINED REMEDY FOR BOTH SITES. LAND USE IN THE AREA IS AGRICULTURAL TO THE SOUTH AND EAST, AND RESIDENTIAL TO THE NORTH AND WEST, WITH APPROXIMATELY 50 RESIDENCES LOCATED WITHIN ONE MILE OF THE SITES. RUNOFF FROM THE SITES IS COLLECTED IN A DITCH, WHICH FLOWS OFFSITE AND EVENTUALLY EMPTIES INTO A RESERVOIR THAT SUPPLIES APPROXIMATELY 6 PERCENT OF THE DRINKING WATER FOR THE CITY OF INDIANAPOLIS. NSL BEGAN OPERATING AS A LANDFILL BETWEEN 1955 AND 1962. BY 1981, NSL WAS OPERATING AS A HAZARDOUS WASTE DISPOSAL FACILITY AND HAD ACCEPTED AT LEAST 16 MILLION GALLONS OF HAZARDOUS SUBSTANCES INCLUDING PAINT SLUDGE, ACIDS, SPENT ACIDS, AND WASTE OIL. THROUGHOUT ITS OPERATION HISTORY, NSL WAS ALLEGEDLY ACCEPTING AN ABUNDANCE OF UNAPPROVED WASTE FROM OFFSITE FACILITIES INCLUDING ENVIRO-CHEM, AN ADJACENT WASTE RECOVERY, RECLAMATION AND BROKERING FACILITY. ADDITIONALLY, EPA AND THE STATE CITED NSL FOR NUMEROUS OPERATIONAL DEFICIENCIES. IN 1983, NSL'S HAZARDOUS WASTE AND SOLID WASTE OPERATORS PERMITS WERE DENIED BECAUSE OF LEACHATE COLLECTION PROBLEMS, ACCEPTANCE OF UNAPPROVED WASTE, AND DEFICIENCIES IN ITS CLOSURE, POST-CLOSURE AND GROUND WATER ASSESSMENT PLANS. THE STATE THEN ORDERED NSL TO PERFORM SEVERAL REMEDIAL MEASURES INCLUDING INSTALLING A FUNCTIONING LEACHATE COLLECTION SYSTEM AROUND THE ENTIRE PERIMETER OF THE LANDFILL, INSTALLING A SLURRY WALL OR ANOTHER MEASURE TO PREVENT GROUND WATER MIGRATION, MONITORING GROUND WATER, AND TO DISCONTINUE ACCEPTANCE OF SOLID WASTE EXCEPT FOR THAT AMOUNT NEEDED TO ADEQUATELY CONTOUR THE SITE. A 1987 ROD PROVIDED A COMBINED REMEDY FOR BOTH THE NSL AND ENVIRO-CHEM SITES DUE TO THEIR PROXIMITY AND OTHER SIMILARITIES. THE 1987 ROD ADDRESSED SOURCE CONTROL CAPPING; PUMPING AND ONSITE TREATMENT OF GROUND WATER; AND IMPLEMENTING DEED AND ACCESS RESTRICTIONS. SINCE THE SIGNING OF THE ROD, EPA AND THE STATE HAVE BEEN ENGAGED IN NEGOTIATIONS WITH THE PRPS FOR EACH SITE. THESE NEGOTIATIONS HAVE RESULTED IN SEPARATE, COMPLIMENTARY REMEDIES AND INDIVIDUAL CONSENT DECREES FOR EACH SITE, AND MODIFICATIONS TO THE ORIGINAL SELECTED REMEDY. THIS ROD AMENDMENT PROVIDES A COMPREHENSIVE REMEDY AND ADDRESSES BOTH SOURCE CONTROL AND GROUND WATER REMEDIATION. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL AND GROUND WATER ARE VOCS INCLUDING BENZENE, PCE, TCE, AND TOLUENE; OTHER ORGANICS INCLUDING PHENOLS; METALS INCLUDING ARSENIC, CHROMIUM, AND LEAD; AND OILS.
THE AMENDED REMEDIAL ACTION FOR THIS SITE INCLUDES CONSTRUCTING A PIPELINE TO PUMP GROUND WATER AND LEACHATE OFFSITE TO THE CITY SEWER SYSTEM AT THE CITY WASTEWATER TREATMENT PLANT AND CONSTRUCTING A HYDRAULIC ISOLATION WALL SYSTEM SOUTH AND WEST OF NSL TO PREVENT UNCONTAMINATED GROUND WATER FROM ENTERING THE GROUND WATER LEACHATE COLLECTION TRENCH. IF FOR ANY REASON THE CITY TREATMENT PLANT CANNOT BE USED, THIS ROD AMENDMENT PROVIDES A CONTINGENCY FOR ONSITE TREATMENT OF

GROUND WATER FOLLOWED BY ONSITE DISCHARGE TO SURFACE WATER AS SPECIFIED IN THE 1987 ROD; TREATMENT AT ANOTHER WASTEWATER TREATMENT PLANT; OR ANOTHER ALTERNATIVE CONSISTENT WITH THE CLEAN WATER ACT. OTHER REMEDIAL ACTIONS DOCUMENTED IN THE 1987 ROD INCLUDING CONSTRUCTING A RCRA CAP AND GAS VENTING SYSTEM; COLLECTING LEACHATE AND GROUND WATER IN A TRENCH SYSTEM; MONITORING GROUND WATER, SURFACE WATER, AND LEACHATE; AND IMPLEMENTING SITE ACCESS RESTRICTIONS ARE NOT AFFECTED BY THIS AMENDMENT. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION RANGES FROM $25,000,000 TO $30,000,000. NO O&M COSTS WERE PROVIDED FOR THIS REMEDIAL ACTION.

PERFORMANCE STANDARDS OR GOALS; CHEMICAL-SPECIFIC GROUND WATER AND LEACHATE CLEAN-UP GOALS ARE BASED ON FEDERAL AMBIENT WATER QUALITY CRITERIA (WQC) AND STATE WATER QUALITY STANDARDS (WQS), AND INCLUDE ARSENIC 0.0175 UG/L (WQS), BENZENE 40 UG/L (WQS), CHROMIUM 11 UG/L (WQS), LEAD 10 UG/L (WQS), PCE 8.85 UG/L (WQS), PHENOLS 570 UG/L (WQC), TCE 80.7 UG/L (WQS), AND TOLUENE 3,400 UG/L (WQC).

REMEDY :

THE PRIMARY REASON FOR AMENDING THE 1987 RECORD OF DECISION IS TO REFLECT THE DECISION TO IMPLEMENT SEPARATE, COMPLEMENTARY REMEDIES FOR THE ENVIRONMENTAL CONSERVATION AND CHEMICAL CORPORATION AND NORTHSIDE SANITARY LANDFILL SITES, INSTEAD OF THE ONE COMBINED REMEDY SELECTED IN THE 1987 RECORD OF DECISION, AND SECONDARILY, TO MODIFY THE SELECTED REMEDY. FOR THE NORTHSIDE SANITARY LANDFILL SITE, THE MAJOR COMPONENTS OF THE REMEDIAL ACTION AS MODIFIED, INCLUDE;

* ACCESS RESTRICTIONS
* RCRA SUBTITLE C CAP AND GAS VENTING SYSTEM
* HYDRAULIC ISOLATION WALL SOUTH AND WEST OF NSL AND NORTH OF FINLEY CREEK
* LEACHATE COLLECTION TRENCH NORTH, NORTHWEST AND EAST OF NSL
* COMBINED GROUNDWATER AND LEACHATE COLLECTION TRENCH SOUTH AND SOUTHWEST OF NSL
* PIPELINE TO THE INDIANAPOLIS DEPARTMENT OF PUBLIC WORKS SEWER SYSTEM, AND TREATMENT OF THE GROUNDWATER AND LEACHATE AT THE INDIANAPOLIS PUBLICLY-OWNED TREATMENT WORKS (POTW) OR ELSEWHERE IN THE EVENT THAT THE POTW IS UNAVAILABLE
* GROUNDWATER, SURFACE-WATER, AND LEACHATE MONITORING PROGRAM.

Item 51

REGION :3
SITE NAME :RESIN DISPOSAL SITE
LOCATION :JEFFERSON BORO, PA
NTIS REPORT #:EPA/ROD/R03-91/113
ROD DATE :910628
ABSTRACT :

THE 26-ACRE RESIN DISPOSAL SITE IS AN INACTIVE INDUSTRIAL LANDFILL AND FORMER COAL STRIP MINING AREA IN JEFFERSON BOROUGH, ALLEGHENY

COUNTY, PENNSYLVANIA. THE SITE IS BORDERED TO THE NORTH AND WEST BY RESIDENTIAL AREAS, AND TO THE EAST AND SOUTH BY UNDEVELOPED LAND. THE SITE OVERLIES A BEDROCK AQUIFER, AND IS ALSO IN CONTACT WITH THE PITTSBURGH COAL FORMATION, A SOURCE OF NON-POTABLE GROUND WATER. PRIOR TO 1950, COAL STRIP MINING OPERATIONS WERE CONDUCTED ON AND NEAR THE SITE. FROM 1950 TO 1964, 85,000 TONS OF PROCESS WASTES CONSISTING OF PETROLEUM AND COAL-DERIVED CHEMICALS MIXED WITH CLAY WERE DISPOSED OF IN A PREVIOUSLY MINED ONSITE AREA, AND EARTHEN DIKES WERE USED TO CONTAIN THESE WASTES. BETWEEN 1980 AND 1984, PRIVATE INVESTIGATIONS IDENTIFIED THAT CONTAMINANTS FROM THE LANDFILL HAD MIGRATED TO THE PITTSBURGH COAL FORMATION, AND THE SOIL AND PERCHED GROUND WATER DOWNSLOPE. SUBSEQUENTLY, THE SITE OWNERS INSTALLED A LEACHATE COLLECTION SYSTEM AND AN OIL/WATER SEPARATOR. EPA INVESTIGATIONS IN 1988 FURTHER CHARACTERIZED CONTAMINATED MEDIA AND ANALYZED POTENTIAL CONTAMINANT PATHWAYS. THIS RECORD OF DECISION (ROD) ADDRESSES SOURCE CONTROL, AS WELL AS PREVENTING MIGRATION OF CONTAMINATED GROUND WATER IN THE PITTSBURGH COAL FORMATION. A SUBSEQUENT ROD WILL ADDRESS ANY REMEDIATION OF GROUND WATER THAT MAY BE NECESSARY. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING SOIL, DEBRIS, AND GROUND WATER ARE VOCS INCLUDING BENZENE, TOLUENE, AND XYLENES; AND OTHER ORGANICS INCLUDING NAPTHALENE, PAHS AND PHENOLS.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES CAPPING THE LANDFILL WITH A MULTI-LAYER CAP, AND UPGRADING THE LANDFILL DIKE; RELOCATING A SANITARY SEWER LOCATED ALONG THE NORTHEAST BORDER OF THE LANDFILL TO ALLOW FUTURE ACCESS WITHOUT DISTURBING THE LANDFILL CAP; INSTALLING A NEW OIL/WATER SEPARATOR FOR LEACHATE TREATMENT, WITH DISCHARGE OF AQUEOUS PHASES TO A PUBLICLY OWNED TREATMENT WORKS (POTW), AND POSSIBLE OFFSITE RECLAMATION OF NAPLS FOR USE AS AN ENERGY SOURCE; INSTALLING A SKIMMER WELL SYSTEM TO REMOVE NAPLS FROM GROUND WATER FOR USE AS AN ENERGY SOURCE; MONITORING GROUND WATER AND SURFACE WATER; AND IMPLEMENTING INSTITUTIONAL CONTROLS INCLUDING DEED RESTRICTIONS, AND SITE ACCESS RESTRICTIONS SUCH AS FENCING. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $4,348,000, WHICH INCLUDES AN ANNUAL O&M COST OF $132,000 FOR 30 YEARS.

PERFORMANCE STANDARDS OR GOALS; CHEMICAL-SPECIFIC GOALS WERE NOT PROVIDED.

REMEDY :

THE SELECTED REMEDY IS A PERMANENT REMEDY FOR CONTAINING THE WASTE MATERIAL WHICH IS THE SOURCE OF SOIL AND GROUND WATER CONTAMINATION AT THE SITE. THE SELECTED REMEDY INCLUDES THE FOLLOWING MAJOR COMPONENTS;

* INSTALLATION OF A MULTI-LAYER CAP AND INFILTRATION CONTROL SYSTEM FOR THE LANDFILL TO PREVENT FURTHER MIGRATION OF CONTAMINANTS;
* INSTALLATION OF A SKIMMER WELL SYSTEM DOWNGRADIENT OF THE LANDFILL TO COLLECT FLOATING PRODUCT IN GROUND WATER THAT MAY OTHERWISE MIGRATE OFFSITE VIA THE MINE VOIDS;
* UPGRADING OF THE LOWER LANDFILL DIKE TO INCREASE ITS STABILITY;
* RELOCATION OF THE SANITARY SEWER ALONG THE NORTHEAST BORDER OF THE LANDFILL TO ALLOW FUTURE ACCESS WITHOUT

UNDULY DISTURBING THE LANDFILL CAP SYSTEM;
* INSTALLATION OF AN UPGRADED OIL/WATER SEPARATOR DOWNSLOPE OF THE LEACHATE COLLECTION TRENCH;
* CONSTRUCTION OF A FENCE AROUND THE PERIMETER OF THE SITE TO PREVENT UNAUTHORIZED SITE ACCESS;
* INSTITUTING DEED RESTRICTIONS; AND
* MONITORING GROUND AND SURFACE WATER AND IMPLEMENTING A SITE MAINTENANCE PROGRAM.

Item 52

REGION :5
SITE NAME :OAK GROVE SANITARY LDFL
LOCATION :OAK GROVE TWP, MN
NTIS REPORT #:EPA/ROD/R05-91/153
ROD DATE :901221
ABSTRACT :

THE 45-ACRE OAK GROVE SANITARY LANDFILL IS A FORMER MUNICIPAL AND INDUSTRIAL SOLID WASTE LANDFILL IN OAK GROVE TOWNSHIP, ANOKA COUNTY, MINNESOTA. LAND CONSISTS OF LOW REGIONS OF UPLANDS AND SAND DUNES INTERSPERSED AMONG NUMEROUS LAKES AND WETLANDS. THE NEARBY DEVELOPED LAND USE IN THE AREA IS AGRICULTURAL AND RESIDENTIAL. THE SITE OVERLIES TWO AQUIFERS, WHICH ARE SEPARATED BY A SEMI-CONFINING LAYER. THE DEEPER AQUIFER PROVIDES REGIONAL POTABLE WATER AND SUPPLIES MANY AREA RESIDENTIAL WELLS. LANDFILL OPERATIONS BEGAN IN 1967 AND CONTINUED UNTIL 1984, WHEN THE OPERATING LICENSE WAS SUSPENDED. AN ESTIMATED 2.5 MILLION CUBIC YARDS OF WASTE IS PRESENT IN THE LANDFILL INCLUDING ACIDIC OIL SLUDGE, PAINT AND SOLVENT WASTE, FOUNDRY SANDS AND SLUDGE, INORGANIC ACIDS, METAL SLUDGE, AND CHLORINATED AND UNCHLORINATED ORGANIC COMPOUNDS FROM PESTICIDE MANUFACTURING. IN ADDITION, LIME SLUDGE WAS USED AS A COVER MATERIAL ON TWO THIRDS OF THE LANDFILL. A 1988 RECORD OF DECISION (ROD) ADDRESSED THE SOURCES OF CONTAMINATION BY CONTAINING THE ONSITE WASTE AND CONTAMINATED SOIL WITH A COVER. EPA INVESTIGATIONS IN 1989 DETERMINED THAT THE CONTAMINATED SHALLOW AQUIFER DISCHARGES DIRECTLY TO THE SURFACE WATER OF THE ADJOINING WETLANDS WHERE GROUND WATER CONTAMINATION IS BEING REDUCED BY NATURAL ATTENUATION, AND THUS, LIMITING MIGRATION OF CONTAMINANTS TO THE SURFACE WATER. THIS ROD ADDRESSES REMEDIATION OF CONTAMINATED SHALLOW GROUND WATER, PREVENTION OF SIGNIFICANT IMPACTS ON SURFACE WATER FROM THE DISCHARGE OF CONTAMINATED SHALLOW GROUND WATER, AND PROVIDES FOR CONTINUED USE OF THE DEEP AQUIFER AS A DRINKING WATER SUPPLY. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE GROUND WATER ARE VOCS INCLUDING BENZENE, TOLUENE, AND XYLENES; AND METALS INCLUDING ARSENIC.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES LONG TERM MONITORING OF THE SHALLOW AND DEEP AQUIFERS, SURFACE WATER, AND SEDIMENT AT A FREQUENCY OF THREE TIMES PER YEAR FOR THE FIRST YEAR AND SEMI-ANNUALLY THEREAFTER; NATURAL ATTENUATION OF SHALLOW GROUND WATER; ABANDONING NON-ESSENTIAL WELLS; AND IMPLEMENTING INSTITUTIONAL CONTROLS INCLUDING GROUND WATER USE RESTRICTIONS. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $800,000, WHICH INCLUDES AN ANNUAL O&M

COST OF $90,000 FOR THE FIRST YEAR AND $70,000 FOR SUBSEQUENT YEARS.
PERFORMANCE STANDARDS; SEDIMENT, GROUND WATER, AND SURFACE WATER MONITORING WILL ASSURE THAT CONTAMINANT LEVELS DO NOT EXCEED SDWA MCLS, CWA AWQCS, AND STATE SURFACE WATER QUALITY STANDARDS.
REMEDY :
THIS OPERABLE UNIT IS THE SECOND OF TWO OPERABLE UNITS FOR THE SITE. THE FIRST OPERABLE UNIT ADDRESSES THE SOURCE OF CONTAMINATION BY CONTAINING THE ON-SITE WASTES AND CONTAMINATED SOIL WITH A COVER. THIS PARTICULAR COVER SYSTEM WAS DOCUMENTED IN A SEPTEMBER 1988, ROD. THE OPERABLE UNIT DESCRIBED IN THIS DECISION DOCUMENT ADDRESSES GROUNDWATER CONTAMINATION. THE REMEDY SELECTED FOR GROUNDWATER CONTAMINATION INCLUDES CONTINUED MONITORING OF BOTH AQUIFERS PRESENT AT THE SITE AS WELL AS MONITORING OF SURFACE WATER AND SEDIMENTS. THE SELECTED REMEDY ALSO INCORPORATES INSTITUTIONAL CONTROLS ON THE PLACEMENT OF DRINKING WATER WELLS AND NATURAL ATTENUATION OF SHALLOW CONTAMINATED GROUND WATER. THIS REMEDY WHEN USED IN CONJUNCTION WITH THE FINAL COVER SYSTEM, ADDRESSES THE THREAT POSED THE CONTAMINATED GROUND WATER BY ELIMINATING OR REDUCING THE RISKS POSED BY THE SITE, THROUGH ENGINEERING CONTROLS. THE MAJOR COMPONENTS OF THE SELECTED REMEDY INCLUDE;

* LONG TERM MONITORING OF THE SHALLOW AND DEEP AQUIFERS FOR VOLATILE ORGANIC COMPOUNDS, ARSENIC, BARIUM, NICKEL, ZINC, PESTICIDES, PCBS AND NUTRIENT PARAMETERS. A MINIMUM OF TWELVE WELLS WILL BE MONITORED.
* LONG TERM MONITORING OF SURFACE WATERS FOR THE SAME CONSTITUENTS WHICH ARE MONITORED FOR THE GROUND WATER. SURFACE WATER MONITORING POINTS WILL BE ESTABLISHED BASED ON A CONDUCTIVITY SURVEY.
* LONG TERM MONITORING OF SEDIMENTS FOR ARSENIC, BARIUM AND NICKEL. SEDIMENT SAMPLE POINTS WILL BE LOCATED WHERE SURFACE WATER SAMPLING OCCURS.
* SEDIMENTS, GROUND AND SURFACE WATERS WILL BE SAMPLED AT A FREQUENCY OF THREE TIMES PER YEAR FOR THE FIRST YEAR AND SEMI-ANNUALLY THEREAFTER.
* INSTITUTIONAL CONTROLS WILL BE IMPLEMENTED AND NON-ESSENTIAL WELLS WOULD BE ABANDONED.
* NATURAL ATTENUATION OF SHALLOW GROUND WATER.

Item 53

REGION :5
SITE NAME :WASHINGTON COUNTY LDFL
LOCATION :LAKE ELMO, MN
NTIS REPORT #:EPA/ROD/R05-91/191
ROD DATE :901115
ABSTRACT :
THE 40-ACRE WASHINGTON COUNTY LANDFILL SITE IS AN INACTIVE SANITARY LANDFILL IN LAKE ELMO, WASHINGTON COUNTY, MINNESOTA. LAND USE IN THE AREA IS PREDOMINANTLY RESIDENTIAL AND AGRICULTURAL. LAKE JANE IS LOCATED 250 FEET NORTH OF THE LANDFILL. THE SITE OVERLIES THE ST. PETER SANDSTONE AND PRAIRIE DU CHIEN DOLOMITE AQUIFERS, BOTH OF WHICH ARE

SOURCES OF DRINKING WATER FOR AN ESTIMATED 3,000 RESIDENTS LIVING WITHIN 3 MILES OF THE SITE. FROM 1969 TO 1975, WASHINGTON AND RAMSEY COUNTIES USED THE SITE AS A SANITARY LANDFILL. THE LANDFILL IS LOCATED IN AN OLD GRAVEL PIT, AND WAS CONSTRUCTED WITHOUT A LINER. AN AREA OF APPROXIMATELY 35 ACRES WAS FILLED WITH SOLID WASTE TO AN AVERAGE DEPTH OF APPROXIMATELY 30 FEET. ABOUT 2.57 MILLION CUBIC YARDS OF SOLID WASTE, EXCLUDING COVER MATERIAL, WERE DISPOSED OF IN THE LANDFILL. THE WASTE WAS PRIMARILY COMPOSED OF RESIDENTIAL WASTE WITH SMALLER AMOUNTS OF DEMOLITION AND COMMERCIAL WASTE. MONITORING BY WASHINGTON COUNTY IN 1981 REVEALED LOW LEVEL VOC CONTAMINATION, WHICH POSES A HEALTH RISK BASED ON LONG-TERM INGESTION OF GROUND WATER. IN 1983, FOUR NEARBY PRIVATE WELLS ALSO WERE FOUND TO CONTAIN LOW LEVELS OF VOCS, AND DRINKING WATER WELL ADVISORIES WERE ISSUED. A 1984 RECORD OF DECISION (ROD) PROVIDED FOR THE INSTALLATION AND OPERATION OF A GROUND WATER GRADIENT CONTROL AND SPRAY-IRRIGATION TREATMENT SYSTEM AT THE LANDFILL. IT ALSO PROVIDED A SAFE DRINKING WATER SUPPLY TO RESIDENTS WITH DRINKING WATER WELL ADVISORIES AND INITIATED MONITORING OF THE GROUND WATER GRADIENT CONTROL SYSTEM. THIS ROD ADDRESSES A FINAL REMEDY FOR DRINKING WATER SUPPLY AS PART OF A SECOND OPERABLE UNIT. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE GROUND WATER ARE VOCS INCLUDING BENZENE, PCE, TCE, AND XYLENES.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES PROVIDING A MUNICIPAL DRINKING WATER SUPPLY SYSTEM TO SUPPLY DRINKING WATER TO 10 HOMES WITH PRIVATE WELLS THAT HAVE BEEN AFFECTED BY THE CONTAMINANT PLUME; AND CONTINUING OPERATION OF THE GRADIENT CONTROL WELL AND SPRAY-IRRIGATION TREATMENT SYSTEM FOR THE FIRST OPERABLE UNIT, WHICH CONSISTS OF FOUR GRADIENT CONTROL WELLS, TWO ONSITE SPRAY-IRRIGATION TREATMENT AREAS, AND ONSITE DISCHARGE TO SURFACE WATER. THE ESTIMATED PRESENT WORTH COST OF THIS REMEDIAL ACTION IS $400,000, WHICH INCLUDES AN ANNUAL O&M COST OF $2,469.

PERFORMANCE STANDARDS OR GOALS; CHEMICAL SPECIFIC GROUND WATER CLEAN-UP GOALS ARE BASED ON RECOMMENDED ALLOWABLE LIMITS (RALS) ESTABLISHED BY THE STATE AND INCLUDE BENZENE 7 UG/L, PCE 6.6 UG/L, TCE 31 UG/L, AND XYLENES 400 UG/L.

REMEDY :

THIS OPERABLE UNIT IS THE SECOND UNIT OF TWO OPERABLE UNITS FOR THE SITE. THE SELECTED REMEDY FOR THIS SITE IS A MUNICIPAL DRINKING WATER SUPPLY SYSTEM TO SUPPLY POTABLE DRINKING WATER TO RESIDENT OF 10 HOMES IN LAKE ELMO WHICH HAVE RECEIVED MINNESOTA DEPARTMENT OF HEALTH (MDH) DRINKING WATER WELL ADVISORIES TO NOT USE THEIR EXISTING WELL WATER FOR DRINKING OR COOKING. THE SELECTED REMEDY FOR THE FIRST OPERABLE UNIT, A GRADIENT CONTROL WELL AND SPRAY-IRRIGATION SYSTEM, WAS INSTALLED AND HAS BEEN OPERATIONAL SINCE DECEMBER 1983. THE MUNICIPAL DRINKING WATER SUPPLY SYSTEM WILL PROVIDE SAFE DRINKING WATER TO THOSE RESIDENTS WHOSE WELL WATER HAS BEEN DETERMINED TO BE UNSAFE FOR DRINKING BY THE MDH. THE SELECTED REMEDY ADDRESSES THE PRINCIPAL THREAT OF INGESTION OF CONTAMINATED WATER POSED BY RELEASES OF CONTAMINANTS FROM THE SITE. OPERATION OF THE GRADIENT CONTROL WELL AND SPRAY-IRRIGATION TREATMENT SYSTEM WILL CONTINUE TO PREVENT FURTHER RELEASES INTO THE AQUIFERS DOWNGRADIENT OF THE LANDFILL AND TO TREAT THE CONTAMINATED WATER

CAPTURED BY THE PUMP OUT SYSTEM. THE MAJOR COMPONENTS OF THE SELECTED REMEDY ARE AS FOLLOWS:

* CONTINUED OPERATION OF THE GRADIENT CONTROL WELL AND SPRAY-IRRIGATION TREATMENT SYSTEM WHICH CONSISTS OF FOUR GRADIENT CONTROL WELLS, TWO ON-SITE SPRAY-IRRIGATION TREATMENT AREAS, AND AN OFF-SITE DISCHARGE OF GROUNDWATER FROM ONE PUMP OUT WELL WHICH OPERATES UNDER NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT MN 0054348, DATED MAY 4, 1989.
* CONNECTION OF 10 HOMES WITH MDH DRINKING WATER WELL ADVISORIES TO THE CITY OF OAKDALE MUNICIPAL WATER SUPPLY SYSTEM.